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SELECTED MILITARY TRANSLATIONS

ON EASTERN EUROPE (5)

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## FOREWORD

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SELECTED MILITARY TRANSLATIONS  
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INTRODUCTION

This is a series publication containing translations of items of military interest from various publications of the Eastern European countries. This report contains translations on the subjects listed in the table of contents, arranged alphabetically by country.

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## BULGARIA

### The New Regulations for Advanced Military Schools: Basis for High Discipline and Achievement

Following is the translation of an article by Colonel P. Minov in Narodna Armiya, No 3752, Sofia, 16 October 1960, page 2. CSO: 1255-S.

The National Defense Minister has endorsed a new book of Regulations for Advanced Military Schools. The regulations now published are the joint effort of the teacher-commander collectives at military schools, officials of the National Defense Ministry, and the rich experience of Soviet military schools.

The Regulations emphasize the privileges and duties of the heads of schools. They are personally responsible to the commanding staff, government, and party for the combat and political fitness of students and reserve students, the total training program in the school they head, the entire personnel's disciplinary and morale-political state, the condition of weapons, equipment, and transportation, living quarters, medical care and financial support, and the administrative and economic activities of the school. In meeting their obligations, the heads of schools must seek the support of Party and Komsomol Organizations, and in solving the main issues of teaching, training, and disciplinary process they should seek the opinion of the Academic Councils.

The Academic Councils, important organs in advanced military schools, put their decisions into action after endorsement by the school's head. The former have no power at any time to change the school head's decisions; they are merely advisors.

The school head's deputy is not only responsible for those matters in which he acts as deputy, but also for subjects and methods used by chairs related to his area of specialty. Thus the deputies are now directly involved in the most important activity of an educational institution — the educational process.

Because the deputy for education, who is also director of the educational department, plays an important part and has many tasks in the life of the school, the Regulations empower him as person director and he alone can, when necessary, give and sign orders in the school head's name.

The Regulations also specify the teachers' disciplinary duties. The officer-teachers are empowered to discipline according to Article

ll of the Disciplinary Statutes and exercise this duty over student and reserve students during study periods. In other words, they have the privilege of disciplining according to their office.

A marked achievement that will play an important part in discipline and training in these schools is that "the best upper class students in scholastic achievement, discipline, determination, and leadership will be promoted to NCO over lower student classes. In the senior class the same duties are performed by seniors." This will enable the students, while in school, to undergo a vigorous command apprenticeship and to go to the units with excellent commanders' qualities.

According to the Regulations, students will be given titles from "student" to "corporal" to "senior corporal" on the basis of his training term and scholastic achievement.

The Regulations state: "The ranks given students of military schools are higher than comparable NCO ranks in the armed forces of those attending a short-term course." This is so because military school students, even though only of the rank of sergeant, have much more knowledge than short-term students and because they intend to become officers.

To promote proper commander growth, those graduated from advanced military schools and given officer rank, with the exception of pilots, are not allowed, as their first commander's assignment, to take a commander's post at a military school. Every young officer should go to the ranks, to apply there the knowledge acquired in school, to gain experience and skill in commanding, to study army life and procedures. This will make it impossible for young commanders who have been excellent students and exemplary in military school to miss practical training in army units and to lag behind at a desk job within a few years.

The Regulations oblige military school teachers after five years of service to present a scientific thesis in the area of their specialty. This demands of the teaching staff, as well as of the school heads, proper development and growth, it helps them become better qualified and specialized, and it also improves the school's educational level.

The matter of school admission is also specified. Candidates have to meet high requirements. It is obligatory that careful selectiveness be employed without any violation of regulations. Students are expelled for low grades and poor discipline and, according to a decree by the National Assembly Presidium, they are not allowed to continue their education in any advanced public schools.

A careful study of the part on "Organization of the Educational Process" will help school heads, teaching staff, and high officials avoid errors in the form and method of teaching and training.

Heads of schools and teaching staff should pay special attention to the paragraphs on grading students. So far, a great number of teachers have not always thoughtfully considered grading according to our six-point system, especially when it has been a question of "poor" and "good." In many cases students and reserve students

who have done well are given the grade of "very good" or "excellent" and those who have done poorly are graded "fair." Teachers should know that irresponsible grading leads to endorsing superficial, shallow and careless knowledge, which in case of combat will be paid for by people's blood.

The Regulations also specify the duties and privileges of unit commanders and directors of institutions and enterprises where students and reserve students are assigned for commander and production training. No doubt an exacting attitude will improve the trainees' knowledge and practical habits and will make them become well prepared young commanders.

The above makes it clear that the Regulations for Advanced Military Schools contains rules and norms whose proper application is a primary obligation of the entire personnel and particularly of the school's head and teaching staff. This obliges the school head to see that the Regulations are studied so that each subordinate is familiar with matters concerning him. Then only will the Regulations be turned into a force assuring iron discipline and high educational level in the advanced military schools.

Communication Procedures Between Headquarters  
and Subordinate Units in the Bulgarian Army

Following is the translation of an article  
by Podpolkovnik D. Savov in Narodna Armiya  
(Peoples Army), No 3753, Sofia, 18 October  
1960, page 2. CSO: 1256-S/

Modern battle is distinguished by broad geographical scope, swift tempo, use of gigantic destructive power, and unexpected change of conditions. These features make great demands on troops and administrative staffs alike. Swift attack, frequent and radical change of circumstances require quick decisions from commanders and staffs and the rapid transmission of these decisions to podeleniya (small units). Under such conditions short, clear, exact troop instructions are of utmost importance. To achieve this, staff work must be organized with precision and systematic training must be carried out.

Early this year much time was lost sending orders down to podeleniya and information up to the senior staff. Experience in this process led the staff to devise a code, which made work easier and shortened the time needed to transmit orders. But code tables can never fully anticipate the complexity of battle, so commands to subordinate podeleniya are kept as simple as possible. They contain the essential ideas without great detail, and thus permit podeleniya personnel time to decipher their orders and review their duties. As battle action develops, these duties are clarified and sharpened by conditions themselves.

The use of special signals hastens the transmission of orders and instructions. Many of the steps involved in preparing podeleniya for battle, for leaving and entering concentration areas, and for moving into the attack can be indicated by a single signal. Signals are especially valuable in artillery and motorized maneuvers.

Personal contact and discussion between commanders is the best way to make orders clear, but in battle this is not always possible. However, often it is possible to back up radio instructions by sending staff officers down to the

podeleniya. This was done during a recent exercise in which a strong "enemy" air attack was repulsed and the action of a forward detachment was coordinated with an airborne landing. As soon as the instructions were received by the podelenie, they were put in effect; when the deputy-commander of the staff arrived, these instructions were made more precise and specific.

If duties are distributed correctly among officers, staff work is greatly expedited. Many times contact between a staff and the podeleniya, and communications with the senior staff, are maintained by only a few officers. When this is done, mistakes are made and staff effectiveness is lowered. Trying to finish some work as fast as possible, Officer Tsolov referred to the wrong village in his battle instructions to one podelenie. Puzzled by his knowledge that this village was far removed from the general battle area, the podelenie commander had to take the time to recheck his orders. In actual battle such an error would be highly dangerous. To avoid similar mistakes, we have formed groups of three officers each, with each group being responsible for communication between the staff and a particular podelenie. This procedure provides mutual control and makes it possible for staff members to get regular rest during the periods of intense activity.

In some staffs an essential weakness is the uneven distribution of work; some officers are loaded down while others have little to do. Most staff officers are academy graduates and have been on staffs for a long time. Their theoretical knowledge and practical experience qualify them to do most of the collection of data and transmission of troop instructions. The key staff members will then have greater freedom to study conditions and to help commanders make decisions.

Much of staff work consists of the collection and correlation of data to keep abreast of current conditions. At any command area or at any command-observation post one can see officers grouped around the radio set. They are there to get information from subordinates, or to contact the senior staff. Indeed, the staff plays a valuable role when it gives essential information to those who request it. But this role, if carried too far, will oppose the basic purpose of the staff -- to help commanders make sound decisions and to encourage subordinate commanders to display initiative within the scope of their instructions. Many officers are pulled from their main duties of troop direction to handle trivial problems. Staffs are often changed from administrative organs into information centers.

Constant requests for information impart potentially dangerous habits to commanders and staffs. Rather than



proffer information, they begin to submit it only upon request. The result is that senior staffs lack essential knowledge during important moments in battle. This general tendency was exemplified during a recent exercise. In the sector of one podelenie the "enemy" counterattacked with heavy forces, but the chief of staff did not report this to the senior staff until a specific request for information had come through. Thus, though enough reserves were available to repulse the "enemy", these were not used for lack of knowledge of the situation.

In view of the nature of modern battle, every staff officer must display creativity, independence, and initiative in his work. During recent tactical exercises, strong interference caused two podeleniya to lose radio contact with the senior staff. At that time, the "enemy" thrust strong forces in depth against them. During the critical moments in that sector, opportune instructions from a small group led by the chief of staff did much to coordinate action and repulse the "enemy" counterattack.

Inertia, lack of efficiency, and fear of responsibility are dangerous characteristics for today's staff officer. On the other hand, it is not true that each man should be allowed to make a purely personal decision on every question. To advocate this would bring chaos. On the most important questions of battle organization and action, commanders of services and units submit their considerations to seniors and await instructions from the commander or chief of staff. Within the limits set by his responsibilities and by the instructions from his superior, each commander must display initiative.

## Training Procedures in the Bulgarian Army

Following is the translation of an article by Polkovnik N. Gruncharov in Narodna Armiya (Peoples Army), No 3755, Sofia, 20 October 1960, page 2. CSO: 1259-8/

The podelenie commander is the sole leader of his podelenie and the key figure in the process of education and training its personnel. It is he who must maintain order, discipline, and combat readiness. By depending upon, and giving guidance to, active members of the military and the party, the commander continually trains and educates his subordinates, increases their military skill, political awareness, and morale. His purpose is to develop soldiers militarily prepared, politically knowledgeable, devoted to their people and nation, and ready to cope with the most difficult situations of modern warfare.

Training and education of personnel is accomplished by means of basic statutes and directives, and by the orders and instructions of the commander. The orders of the commander are law to his subordinates, to be carried out unconditionally, exactly, and within the designated time. The work of the commander cannot be judged by how many orders and instructions he issues; how well they are carried out is essential. Therefore, a good commander not only gives orders but uses his full disciplinary powers to see them put in effect, so that these orders will have the necessary educational influence upon subordinates. Many of our commanders do very well in this regard. In their discipline they use both encouragement and punishment as powerful means to develop in their troops a spirit of personal responsibility for the defense of their country.

In the beginning of the past training year Officer Yosifov expressed thanks to Captain Nedyalkov, battery commander, and his personnel for service well performed and for success in military and political preparedness. This encouragement gave the troops satisfaction and joy; it strengthened their self-confidence and drove them to greater efforts in their training. Indeed, by the year's end, the battery had shown excellent results in a number of training subjects.

Private Srebrov arrived at his camp an extremely undisciplined individual. The just severity of his commanders -- of his battalion commander, Officer Yosifov, in particular -- forced Private Srebrov to take a critical view of his behavior and to draw some conclusions about his future. Now Private Srebrov is highly disciplined and careful, serving as an example to his comrades.

Officer Zlatev is a good podelenie commander, a respected teacher and trainer. He relies strongly on the Party and Komsomol organizations, leading them in efforts to increase military discipline and to create conditions conducive to exact fulfillment of orders from the commander. And he has had obvious success. Breaches of discipline are comparatively rare in his podelenie, while both combat readiness and political consciousness are high.

One factor important to the scrupulous carrying out of orders is a high degree of firmness by the commander -- his direct control and review of the steps necessary to an order's fulfillment. This has broad significance in connection with troop training. The systematic control and thorough inspection of actions following an order mobilizes the capacities of subordinates; it forces them to carry out commands well and in the appointed time. Past experience has confirmed this theory many times.

The commander also helps his subordinates attain success in their academic program for military and political training for modern battle. The whole system of activity in various subjects is organized by the commander to impart to subordinates the ability to cope with the great problems of modern warfare, to strengthen their will and character, and to give them high morale.

Tactical exercises contribute more than any other activity to the combat readiness of troops. In tactical exercises one must call to play the whole complex of military knowledge, skill, and instilled habits requisite to success in modern warfare. During tactical exercises the commander, as leader, drills his subordinates in various technical and tactical methods essential to a smoothly functioning podelenie. In addition, this training develops qualities necessary to a soldier -- alertness, initiative, firmness, stability, discipline, and orderliness. Officers and sergeants must sharpen their qualities of leadership and strengthen their firmness of purpose under simulated battle conditions.

Tactical exercises are the most complex form of tactical training. Here, the commander is careful to instruct the soldier in all the necessary arts of battle. Officer Buyukliev, a battalion commander, serves as an example. During the academic year he conducted many company



exercises involving weapons firing. He forced commanders and troops alike to remain active without break for two or three days under the most varied battle conditions. He had them complete marches day and night under constant "enemy" pressure; occupy a concentration area, taking all measures for battle security; attack prepared and hasty defenses; advance headlong; beat off a counterattack while maintaining the advance; keep pressure on a retreating "enemy"; overcome water barriers and still keep up the momentum of attack; take the offensive while under enemy fire. Besides providing tactical training, these exercises serve as prolonged tests of the spirit, will, and tenacity of both troops and commanders. Many tense, decisive moments develop which demand the highest degree of strength, energy, and courageous action.

Officer Buyukliev went through an interesting exercise with Captain Dryanov's company. The company was given the alert to move out from under enemy pressure and prevent an airborne landing. Difficult conditions, very similar to those of real battle, gave commanders a test of their ability to organize for battle at short notice; the troops were hard pressed to show initiative and speed in carrying out their operations. The company passed its tests well; but there was more to come -- a prolonged march, hand-to-hand combat, and other strenuous actions. The company of Captain Dryanov came out of these exercises as an organizational unit fully trained in tactics. It possesses a high morale and a will for victory over any tough opponent.

The efforts of Officer Buyukliev and the purposeful tactical training he directed made possible the top showing of his battalion in the last tactical exercise. Spectators praised the battalion and the senior officer mentioned it in later analysis as an example of excellence.

Tactical training is closely tied to other matters, including firing and life activities. It is the duty of every commander and soldier to become expert in the use of weapons. Firing practice and special training contribute to the development of this skill only if commanders make strong demands for excellence in these activities. Here too, officers must educate and discipline as well as train. Thus troops become familiar with the rules and methods of weapons firing. Simultaneously, they toughen their nerves and again self-confidence. The same methods apply to training troops in the use of equipment. By working with tanks, self-propelled artillery, tractors, and motor vehicles the soldier learns to like machines, to keep them repaired and ready for battle. For example, many driver-mechanics of Officer Stanchev's podelenie kept their tanks

in constant repair. During their last tactical exercise they covered a tough course and thrust deep into the "enemy" defenses, solving with distinction all the battle problems assigned to them.

Nor should drill be overlooked within the system of training, for it contributes to discipline and order. All drill is conducted by the commander in accordance with Drill Regulations. Prompted by drill to take rapid, energetic actions, the troops are molded into a single military collective ready for the most complicated engagements.

Next, physical conditioning must be considered. Physical training develops tenacity, agility, decisiveness, and courage. The commander develops these traits in his men by conducting systematic activities involving obstacle courses, hand-to-hand combat, grenade throwing, crawling, and long-distance running. The purpose of physical training is to develop soldiers who are physically and morally strong and who will be able to surmount every difficulty of modern warfare.

Topography may be included among the academic subjects taught to troops. The conscientious commander can give the study of topography added significance. By pointing out the many place names appearing on new maps, he will impress upon his troops the progress being made by the Bulgarian people in their socialist transformation of the country.

While educating his subordinates and training them to obedience, the commander constantly works toward the daily increase of political awareness in his soldier. To succeed he must stress ideology and devotion to the party, for this is the very basis of the socialist system of training and education. Also, the commander must implant in his troops flaming patriotism, national pride, fierce hatred for the enemies of his country, iron military discipline, and respect for law and order. The best way to do this is to have regular programs of political activity, political information, and party-political work.

Generally, the successful commander uses many different methods to prepare his men for war. At the end of the academic year Officer Markov's podelenie was given top recognition for success in battle training and political education. Podelenie commander Markov stressed party action and devotion to ideology. By his own example he influences his subordinates. Once, when company commanders were unhappy over the poor showing of their units in handling the light machine gun, Markov took charge of the training in person. In short order the men were ready, and firing with live ammunition showed results that rated from good to excellent.

Constant training and education of troops is the first duty of the commander as a military man and as a party member. Good commanders are vitally needed by our national army in these days.

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## HUNGARY

### Data for Evaluating Biological Weapons

Following is the translation of an article entitled "Adatok a biológiai fegyver jelen-tosengenek megitelesehez" (English version above) by Med Lt Col Laszlo Treff in Honvedorvos, Vol 12, No 3, Budapest, Jul/Sep 1960, pages 177-187. CSO:1199-S/a

The application of biological weapons is not a new idea. It is well known, that past and recent wars were followed by various epidemics, which, in many cases, influenced the final outcome. The enormous losses resulting from war epidemics are well known. These observations and experience have promoted experiments in creating artificial epidemics.

From a historical point of view we have experienced various stages of development resulting from political reasons and from the level of contemporary science. It is also well known, even if scientific evidence is lacking, that the Mongols brought about a plague in 1346 during the siege of Kaffa, by throwing cadavers of plague victims into the city. Spanish and Portuguese colonizers brought about smallpox epidemics by sending infected persons among the natives. Similar events frequently occurred in the Middle Ages.

In the twentieth century, during which biological science has made rapid progress, we have seen that the possibility of using biological weapons is based on evaluation of scientific progress. In World War I especially, the Germans utilized cultures of plague and glanders. The latter affected an area of 4500 miles in Mesopotamia. This must not be underestimated if we take into account the fact that mules were the principal means of transportation for the Allied forces operating there.

Subsequent to these developments, an international conference convened in Washington in 1922 with Bordet, Cannon, Pfeiffer and Madson, among others, as participants. They were a little skeptical in their estimation of using biological weapons. In spite of this, the Great Powers investigated the problem further, and in 1925, with the exception of Germany and Japan, ratified

a treaty prohibiting the use of biological weapons.

In the period preceding World War II, the problem of using biological weapons was reconsidered, resulting in two opposite points of view. One of them was that biological weapons are inefficient, whereas the other looked upon biological weapons as not only capable of infecting, but killing persons, livestock and plants in big cities and large areas.

Between the two wars, in Germany, and especially in Japan, there were theoretical and technical experts of biological weapons who used the available knowledge of biological warfare for the definite, although perhaps not common, goal of bringing about epidemics.

One of the major figures was the Japanese Isu Shiro, under whose direction in 1936, preparations were made to coordinate all attempts to make biological warfare. These attempts included production and methods of use in tactical and strategic application. Three groups worked to this end in 1940, one of which (division No 731) was composed of 3000 employees. Research was scientific and employed the brutal use of human subjects. Cultures of germs were produced and tried on produce, fruit and candy.

Between 1940 and 1944, eleven centers of plague and various animal diseases were developed by sabotage in Manchuria and Mongolia, as for example, sinderpest, smallpox and anthrax. By the end of the war, they had well-equipped plants capable of producing highly concentrated viri. A single plant was capable of producing the following amounts of germs per month:

plague bacilli	300 kg
anthrax bacilli	500-700kg
typhoid fever bacilli	800-900 kg
cholera-vibrio cultures	100 kg

The advancement was continued after World War II when the Japanese turned over their results and stock to the United States.

The USA, in 1942, formed a research group under the direction of Theodore Rosebury. This group was to conduct research on all available data concerning biological warfare and after evaluation of the results was to give an opinion on the possibilities of its application. After the war, an official research and development program was initiated for investigating biological warfare, on orders of the Department of Defense. The Chemical Corps was responsible for the execution of this program. A research center was formed at Camp Detrich in 1944, where 4000 employees worked under the guidance of top experts using up to date equipment.

We must mention the atrocities of biological warfare in the Korean War. An international committee conclusively removed all doubt that the peoples of Korea and China were subjected to biological attacks. For example, in 1952, as a result of such an attack, thirty-six of the fifty persons infected with plague died. There is evidence of cholera and thorax bacilli utilization as well.

Two main conclusions may be drawn from the international scientific committee's study: It is difficult to obtain information and evidence of an already committed biochemical attack, and that the enemy did not utilize the most available means of such warfare existing at the time (1951-1952). This is surprising indeed. It is often difficult to determine what the actual goal of such attacks is, especially if we consider not only the germs, which do not actively attack humans, but the seasons of the year during which the germs were used—a time when the use of biological warfare was reduced to minimum efficiency. Perhaps the whole incident was aimed at conducting research in determining the psychological effects of biological warfare. The dangerous nature of this type of warfare is evidenced by, not only its history, but also the research data obtained in the laboratory. Artificial transmission of infectious bacteria and viri among animals is an old and effective method. (For example the use of salmonellosis for extermination of rodents, or the use of myxomatosis against rabbits).

## 2. Principles of Biological Warfare and Its Main Characteristics.

In evaluating new weapons, a basic factor is whether or not the weapon is capable of accomplishing military objectives. These include the elimination of personnel in the military and in industries of strategic importance, without endangering the safety of the party using the weapon. In biological warfare, biological weapons (pathogenic bacteria, toxins, viri, protozoans, molds, parasites) are used deliberately with the purpose of inducing sickness in humans, livestock or crops, so that these are no longer useful to the enemy. Biological warfare is the utilization of pathogens for creating epidemics, and the development of biological weapons by utilizing results of scientific research and development.

The primary target of biological warfare is the human population, even if the applied biological weapon is not directed directly against it.

The enemy may employ one the following methods of biological attack:

- 1) Direct (open) attack
  - 2) Camouflaged attack (by spies or "diversants")
- According to the method of use, the attack may be:
- 1) Single (employing only one variety of pathogen)
  - 2) Mixed, or compound (when two or more pathogens are employed)
  - 3) Combined (when a biological attack follows a previous nuclear or chemical attack)

According to its application as a means of warfare, the biological weapon may be used as a:

- 1) tactical, or 2) strategic weapon.
- Naturally, these categories lend themselves to variations, and



are not rigid. They serve didactic purposes. For example, the enemy can attack openly in strategic dimensions, and at the same time can apply one or more pathogens (mixed or single method) to be further combined by thermonuclear or chemical attacks. An immediate, that is an open attack, is one which is expected from the territory of the attacker.

1. Such attacks are most frequently initiated from the air, usually in the form of artificial aerosols containing pathogens in an artificial cloud or smoke. These can be expected from tanker aircraft (cisternic) or ships. In such cases the aerosol is carried to the target by air currents. This type of aerosol may be deployed to the target area by various types of bombs, guided missiles, artillery shells, or dirigibles.

2. A biological attack carried out by saboteurs might be of equal damage. To be sure, in some cases it is even more dangerous than a direct attack. Such subversive attacks are aimed primarily at endangering water supplies (water works, pipes, reservoirs), food supplies and food services. In subversive attacks it is possible to transmit infectious pathogens to the respiratory organs, contaminate air in areas of public assembly in subway tunnels, and air-conditioning devices of large enterprises. Saboteurs can attack in many places at the same time. Attacks directed against water supplies or large enterprises may result in widespread infection.

3. It is common even during natural epidemics to experience mixed infections where diseases carried by foodstuffs are contaminated by two types of germs.

Even in our country [Hungary] it has been found many times that two or three causes of diseases were responsible for an epidemic. This concept is important from the standpoint of laboratory diagnostics, for in laboratory work we should never be satisfied with one type of pathogenic culture which may be found. All hidden causes must be detected.

4. In regards to combined attacks, it must be mentioned that experimental nuclear testing prove that ionic radiation, by decreasing the normal resistance factor of humans against disease, may result in serious harm to the human organism.

Complex causes of increased susceptibility are:

Decreased barrier function of mucous membranes.

Increased rate of growth of pathogens in sweat glands.

Decrease of white blood cells in peripheral blood circulation.

Decrease in phagocyte activity.

Decrease in the bactericidal ability of blood plasma and decrease of antibiotic production.

One of the major dangers of radiation sickness is the development of infectious processes with death resulting in the third to fifth week after exposure to radiation. The fact that simple

infections, which are pathogenic to a lesser extent, may cause serious illness, can be attributed to the same reason.

Not of less importance, is the fact that an organism exposed to ionic radiation loses its immune reaction. The reaction of an irradiated person to a protective vaccination is not satisfactory. Furthermore, such persons may not be administered protective vaccines due to the danger of infection by the microbes present in the vaccines (e.g. plague, tularemia, brucellosis, influenza, etc., ). This means that the danger of biological warfare attacks against persons previously exposed to ionic radiation, is immense. It also must be taken into account that this danger is increased by frequent occurrence of epidemics in wartime, due to deteriorated conditions which can reach the levels known from previous wars fought with traditional weapons.

In biological attacks directed against animals, human beings are not only endangered immediately (e.g. by transmission of pathogens infecting animals- in the case of arthropozoonosis), but also by the lack of animal foodstuffs available to the public.

Plant life may be attacked with ease using biological weapons.

### 3. Characteristics of Biological Weapons

According to their importance and effectiveness as weapons of mass destruction, first place is occupied by the thermonuclear type. In any future war, second place would be occupied by chemical and biological weapons. Today it would be difficult to judge which of the latter types is more dangerous. It is beyond doubt, however, that biological attacks would present a difficult defense problem. Such weapons could be used in sabotage attacks preceding a declaration of war, as well as in other attacks during the actual war.

There are many and various agents which can be used in biological warfare. These include diseases of humans, livestock, foodstuffs and hormones. This broad field may be expanded by scientific breeding of additional species or by isolating hitherto unknown types.

From the standpoint of biological warfare, the most usable agents are: bacteria, viri, protozoans, fungi, and insects which serve as disease carriers.

The biological weapon is similar to the chemical weapon in that it is distributed over a large area, causing harm to a large number of persons at one time. From the biological standpoint, they are similar in that both are more or less spread through contact, and that both can be expected to effect a demoralizing influence because of the uncertainty involved (e.g. smallpox in Germany).

In most other aspects, biological and chemical weapons are dissimilar. For example, a chemical agent develops its effect only in well chosen moment of contact with the victim, and cannot last in the target area for a prolonged period. Some poisonous gases



(mustard gas) have a long incubation period and a lasting effect. On the other hand, every contagious disease has an incubation period of not less than several hours after initial contact with the pathogen, and sometimes as long as several weeks. (Some diseases such as leprosy or rabies have such long incubation periods--weeks, months, or years, that their use as weapons is impossible. Furthermore, the effects of the disease spreading materials are definite, and in many cases lasting. Some of them, of course, e.g. leptospores, have a persistency that is less than that of the mustard gases, but the characteristic feature of others is their long persistency in the target area, and their maintained contagiousness, for example, as those spread by ticks, spores of anthrax bacilli ("Damned meadows").

There are other dissimilarities between chemical and biological weapons. Such is the ability to cause epidemics. Therefore a simple but effective attack may spread over a much larger area than that attacked immediately. Similar to the infectivity is the frequency of an infective agent in a definite group of infected persons. The infectivity is the most important factor in evaluating the ability of an agent in biological warfare.

Furthermore, biological warfare materials differ from chemical warfare materials in that they do not have to be manufactured. They merely grow cheaply and efficiently. However, biological weapons do change with time. They may entirely lose their virulence if they are separated from the type of human or animal tissue on which they efficiently grow. This is an important factor, for only those types are usable as weapons which do not lose or decrease in virulence. This also means that virulence can be increased and the antigen structure may be varied.

It is known that handling infectious material is dangerous. For this reason, even the most efficient biological weapons are active in reverse. This is more true with biological than with chemical weapons.

Certain questions of biological warfare pertaining to the study of epidemics must be discussed here. The study of epidemics, or the study of how epidemics spread, appear and survive in the population, is of basic importance in considering biological weapons. Such weapons have as their purpose the creation of mass epidemics, and the success of this is dependent on the degree to which we understand the conditions for the natural occurrence of epidemics. It must be remembered, however, that data obtained in the study of natural epidemics are limited in value, since biological weapons are artificial rather than natural.

It would be wrong to equate the symptoms of naturally incurred diseases with those of biological agents. The latter are the result of scientific breeding, only based upon natural types, and many differences exist. These differences add up to the following:

1. An infection incurred by a biological agent may be more intense(massive) than one incurred by its natural counterpart.

2. Further differences between the infecting agents and natural contagious material are:

- a) artificial types may be more virulent
- b) their occurrence in a given geographical location may be unusual
- c) artificial types may be immune to medicine and antibiotics in general use
- d) artificial types may give contradictory and differing results in conventional diagnostic methods.
- e) they may be mixed with diseases which may not occur or are rare in nature.

3. We must definitely consider that the mode of penetration is different from those of natural infections. Consequences of this may be:

- a) an agent penetrating into an organism by extraordinary means might be more dangerous and infectious than that of a natural infection.
- b) the symptoms of artificial disease are different from symptoms of the natural type.

4. The disease may be contracted by the victim while his body suffers from shock or irradiation burns. For this reason, research of biological weapons must be familiar with all diseases, domestic and foreign.

Some immunological questions must be discussed regarding problems of protective Vaccination. Whenever there is an effective vaccine at hand to be used against any disease, all present data indicate that the vaccine should be used. There are, however some unanswered questions regarding the advisability of vaccinating against biological agents, even in such cases where the vaccination proves its efficiency in every day use. Such problems may include the following considerations:

a) It is known that massive infectious doses may overcome average immunity. It is questionable as to whether the immunity created by common vaccines is adequate against artificial infections.

b) The second problem concerns the unconventional way in which artificial diseases enter the body. It is characteristic of all aerosol-spread diseases to be not only atypical in nature, but also that they spread through the body much more quickly and dangerously. Entering the lungs, these germs spread as fast as if they were injected into the body subcutaneously. The increased danger is indicated by the fact that a given number of botulinus toxin which penetrates the organism by aerosol, are several thousand times more poisonous than an equal number of such organisms entering via the digestive tract. There is, therefore, the question, as posed in the scientific literature, as to whether conventional vaccines used in daily life ensure "respiratory immunity" as well.

c) The next problem actually deals with additional aspects of respiratory immunity. It is well known that the lungs are hypersensitive to inhaled substances, especially if the body was previously subjected to a particular antigen. It is also known that there is only a quantitative difference between hypersensitivity and the resistance factor. Low resistance is inadequate against antigens entering the body and may lead to hypersensitivity reactions. On this basis we can easily presume that an inadequate state of protection against artificial infections of the respiratory organs, may result in hypersensitivity as well as failure to protect. The allergic symptoms, occurring in many cases, may be very serious, and may aggravate the condition of the afflicted person.

d) Even if it were possible to reach a degree of protection that satisfies respiratory immunity, the chances of using vaccines may be very limited. We have adequate vaccines against very few contagious diseases, and in many cases, such vaccines are of limited use only, as for example in epidemic typhus. These vaccines cannot prevent disease, but can merely reduce its intensity.

There is another group of diseases against which there exists no preventive or reductive vaccines which are suitable for human use. To this group belong most biological agents which are termed suitable for use as weapons. For example, tularemia, brucellosis, most diseases caused by viri, systemic diseases caused by fungi, etc.

It is the last two groups mentioned above- those for which there are practical vaccines- that represent the field in which extensive research must be conducted for developing vaccines. Among such possible preventives may be: live vaccines, more effective vaccine breeds, giving increased immunity, protective antigens produced by virulent protogens, and research on how to apply them. In this respect, the living characteristics of bacteria and the particular forms of the human body's resistance requires more elaborate study.

e) Similar to the common protective practice against epidemics, the use and effectiveness of protective vaccines could be increased by improving the protection against biological agents, by combining vaccines. Specific protection against biological agents requires a combination of antigens that do not normally occur and are unusual under given geographical conditions. The possibilities of combining unknown protective antigens with known ones, especially by combining live vaccines with inorganic antigens, must be studied further.

f) Additional aspects of measuring the value of vaccines must be developed for the evaluation of their effectiveness. We must have accurate and usable data regarding its degree of protection in vaccinated individuals as well as the masses. These data must deal with the evaluation of live vaccines.

4. Infectious Agents Applicable as Biological Weapons,  
Their Modes of Transmission, and Technical Equipment for Their Use  
Against the Enemy.

Contagious diseases are traditionally divided into five major groups based upon their mode of transmission:

- A. food and water
- B. contact
- C. vectors
- D. air
- E. endogenic diseases

The last group is not suitable for biological warfare, and so will not be discussed.

A. This group includes contagious agents spread by food and water. This group can be subdivided into two groups:

- a) diseases of the digestive tract, where the contagious agents enter the body through the stomach and intestines
- b) spread by contact with water, and entering channels other than the digestive tract.

Group a) is characterized by the great water-epidemics, such as cholera and typhus. Usually the water is contaminated by a sick person or by a vector. If many persons consume such water, then explosive epidemics may result. These often occur in large cities with inadequately supervised water supply systems. In biological warfare, usually typhus and cholera have priority, as the most suitable factors. Since, however, several factors may decrease their effectiveness, because there are many known vaccines and preventives against cholera and typhus, their use is limited. To this group belong: dysentery, salmonella enteritis, staphylococcus, food poisoning and botulism. These can be spread through water or food, and may be spread secretly by saboteurs. The latter agents can be used to contaminate fodder supplies of livestock raising areas by aerial means.

Botulinus-toxin is especially suitable for contaminating certain food plants by saboteurs.

The most characteristic disease of the b) group is the "Weil sickness", caused by leptospores. From the military point of view, it may prove to be efficient because it affords protection against reversible action.

In group B. we are dealing with diseases which spread by indirect contact and by infected wounds. A large and heterogeneous group of diseases include nearly all of those caused by cocci, including diseases of staphylo and strepto cocci, tetanus, gas gangrene, and diseases spread by animals, such as rabies, and fever by gnat bites.

The pathogenic clostrides, because of their spores, are resistant in the same way as are the anthrax bacilli, and so might presumably be applied in the same way. But they lack a high degree of contagiousness, and are only effective when deep

tissue penetration is possible.

Group C. include those diseases which are spread by vectors. Many of these agents are supposedly adaptable for biological warfare. These are: malaria, Dengue-fever, equine-encephalomyelitis-virus, the spirochetes of returning fever, spread by ticks, and the pathogenic rickettsiae. As an agent of biological warfare, malaria can be taken into primary consideration because of the difficulty in developing pathogenic cultures of the others in adequate quantities.

The diseases spread by vectors represent a group of great variety. The groups which can be distinguished according to the means by which they are transmitted are: a) fleas and lice, b) mosquitos and gnats, c) ticks, d) other vectors.

Group a) includes bubonic plague, epidemic typhus, and epidemic recurring fever. None of these is particularly suitable as a biological agent, except bubonic plague, because they generally require deterioration of the human organism, and general poor personal hygiene.

At first, bubonic plague, as typhus and cholera, was considered suitable as a biological weapon. But this disease is a function of social disorder and has a complex chain of transmission in which fleas feeding on humans, rats and other rodents, constitute the links of the chain. Widespread epidemics were presumably spread by plague-bacilli carrying rodents, which immigrated from epidemic areas where the greater part of the rodent population had become immune, to other areas where the rodent population was susceptible to infection, and where the human population had become infected by fleas from perished rodents. This problem is further complicated by the fact that the fleas of rats favor a certain temperature ( $16-20^{\circ}\text{C}$ ), and require a high degree of humidity. These are the reasons, among others, for which we must be critical in evaluating the application of bubonic plague as a biological weapon.

In group b) and c) there are some presumably suitable biological weapons.

The agents belonging to group d), with the exception of tularemia, which might be spread by various vectors, and bacillary dysentery, which might be carried by fleas, can not be considered suitable as biological weapons. So we can exclude trypanosomiasis, leishmaniasis, because of the difficulty in producing pathogens in large quantities. We must also exclude pappataci-fever, the vector of which requires a lifespan of 10-14 days and two feedings, to be infectious, and the Tsutsuga-Musi group, since their pathology is not clear.

Group D. Contagious diseases spread by air.

This group includes the most important diseases from a biological warfare point of view. It includes pulmonary plague, influenza, measles, mumps, psittacosis, anthrax, many other veterinary diseases, other diseases spread via the respiratory organs, such as tularemia, brucellosis, glanders, melioidosis, and



yellow fever.

From the biological warfare point of view, aerial transmission seems to be the most suitable way of infection. Newer research has produced evidence that the transmission by drops is but one means of spreading disease. With suitable so-called aerosol-producing instruments, we can demonstrate bacteria spread into the air in a form of spray, hours later. In experimental chambers in which bacteria had been placed in the form of fine clouds, it was shown that only a small percentage were dormant, and that even after twenty-four hours a considerable amount of living and virulent bacteria could be demonstrated in the bottom of the chamber. These observations stimulated further research in analyzing the behavior of biological particles, pathogenesis of respiratory organ infection, treatment of such diseases, and protection against them.

During the past fifteen years, considerable research was done in investigating contagious particles and their biological and physical properties. Many new methods have been developed for quantitatively exposing experimental animals to the effects of aerosols in which pathogenic particles occur in definite quantities and volume. The technical superiority of many of these aero-biological methods is considerable. According to evidence of published material, scientists succeeded in producing aerosols which contained one tularemia bacillus per liter of volume, or feeding an aerosol on wood, so that the experimental animal got ten to fifteen microorganisms per feeding.

We understand aerosol to mean a definite group of colloids, the characteristic of which is the distribution of liquid and solid materials in the form of a fine cloud, such as clouds, dust and fumes. An aerosol consists of dispersed material and a dispersing agent. If the dispersed material is solid, we speak of it as dust. If it is a liquid, we speak of it as clouds. The life span of aerosols vary, and as time elapses, it will vary without external influences. The stability of aerosols, according to Dantrabande (1954), is influenced by two factors: 1) The small size of the dispersed particles; 2) The uniform character of particle size.

The importance of particle size in the aerosol has been proved many times. The organs of the upper tract of the respiratory system, such as the nose, trachea and larger bronchi, are capable of eliminating large particles by means of air currents. On the other hand, extremely small particles having a diameter of one to four microns, can resist this obstacle, and penetrate the alveoli of the lungs. This area is very susceptible to contagious materials, so the effects are the same as that of penetrating the tissues themselves.

Extensive analysis proved that there is a characteristic relationship between the particle size and the infectious dose of

the anthrax spore. For the infection of experimental animals, a seventeen times smaller dose is needed when using particles smaller than one micron, than when using twelve-micron particles. Similar results were obtained in the experiments of Day and Perschetti:

The effects of particle size on the virulency of anthrax spores in experimental guinea pigs

Mean diameter of organism in microns	Respiratory LDs (spores)
13.0	700,000
12.0	660,000
8.2	358,000
6.8	221,000
4.9	74,000
2.7	60,500
1.5	22,800

None of the aerosols is entirely homogeneous. The data of the table above not only prove the importance of particle size, but also indicate that infection can be spread only by particles containing spores. This is also proved by the following table:

Particles, % smaller than six microns	Spore content of particles smaller than six microns
0.17	0.02
1.90	0.75
40.0	15.0
45.0	28.0
98.0	95.0
100.0	100.0

The relationship between the infectious dose and particle size in brucellosis is even more definite. According to the investigations of Henderson and Peacock in 1956, the relationship between particle size and the LD<sub>50</sub> is 1:600, in comparing particles having a size of from one to twelve microns.

Experiments were made for the analysis of penetration and detection of microparticles in respiratory organs, using special instruments which made it possible to separate and analyse fractions of inhaled air. Volunteer subjects inhaled dust of uniform particle size, and it was found that twenty-five percent of the particles, having a size of one to three microns, remained more than three months in the alveoli of the lungs. As the particle size increased, the percentage of those penetrating the alveoli decreased. Only a small percentage of those having a diameter of less than 0.5 microns remained in the lungs.

The facts stated above have great significance from the biological warfare viewpoint. With suitable means, it is easy to

spread contagious material far to the rear of the enemy, and it is not necessary for biological organisms to be in contact with the biological agent. These materials will remain virulent after being dormant for a long time, and by air circulation or human activity, they can reactivate, and so become contagious.

It would be a mistake to think that it is easy to imitate nature in causing artificial epidemics. The coordinated effects of many climatic, meteorological and aerodynamic factors are necessary for efficient biological warfare. The growth of the infecting agent in foods or food products, such as milk, depends upon the nature of the infecting agent. This secondary effect may result in extensive infection.

The following data indicate certain properties of clouds consisting of small particles.

Under carefully selected meteorological conditions, inorganic material was evaporated on board a ship sailing a distance of seventeen miles from shore. The material of the aerosol was Zinc-Cadmium Sulfide, which was evaporated to particles of two microns in diameter. The fluorescence of the material facilitated its condensation and collection. Two hundred and four kilograms of the material were evaporated during a trip of two hundred and fifty kilometers. The maximum distance at which the particles could be demonstrated was seven hundred and twenty four kilometers. The area in which at least one particle could be demonstrated in one liter of air, was 88,060 square kilometers.

From the above, it appears that biological warfare is a reality. Its application is supported by the fact that biological warfare endangers only humans, animals and plants, whereas machinery, houses, and manufacturing plants remain unaffected.

The basis the defense against biological weapons is adequate public health, epidemic organization, and adequate personal and material preparation. Factors for efficient preparation are: Standards of microbiological and virological laboratories, the number of, and training standards of epidemiologists and physicians expert in dealing with epidemics, expanding and accelerating the production of preparations necessary to make the population immune to infection. It is also necessary to improve diagnostic methods.

Taking into account the needs of our public health service organizations against common epidemics, there are possibilities and needs for improvement. All efforts must be aimed at the material and personal factors of preventive organization against epidemics. Even as these efforts are needed to improve the defense against biological warfare, they are also desirable from the standpoint of satisfying the normal needs of the population.

This means, that in contrast to expenditures for providing protection against other weapons, investment in defensive means against biological weapons will never be lost, even in the case



of a lasting peace, in which biological weapons would never be used.

### Concentrated Milk For Use By Both Civilian And Military

Following is the translation of an article entitled "A katonai es a polgari eletben egyarant felhasznalhato tejsuritmenyek" (English version above) by Zoltan Odor, chemical engineer, in Honvedorvos, Vol 12, No 3, Budapest, Jul/Sep 1960, pages 203-205. CSO: 1199-S/b]

The modernization of armies also requires the modernization of food production. An operating army could hardly be supplied with food by traditional methods. It is therefore understandable, that an increasingly important role is being played by various canned products, concentrated, prepared and semi-prepared food products containing the necessary nutrients in a small volume and in an easily digestible form which do not require equipment for their preparation. The soldier can even prepare his own food. Requirements for such products include the following factors: The products must be capable of being stored for long periods, do not require much transportation space, must have high nutritional value, their packaging should give protection against radioactive, chemical and biological warfare materials, and lastly, should provide the soldier with his favorite foods without complicated preparative methods.

In addition, it is always advantageous when food products, which comply with military requirements, can also be used and sold in civilian life.

The simplest method by which food can be made from a food product is the simplest method of reducing its volume and preserving it by condensation. However, the solution to this problem is not so simple. Care must be taken to prevent basic characteristic changes in the product during the condensation process, such as its flavor, color and nutritive content.

In solving the problem described above, I started a series of experiments for producing condensed milk products. I have chosen milk products for this experiment, because albumin consumption can be increased by this method. The water content of milk is 87%. In extracting the water content, I had to prevent the destruction of the essential ingredients. Chemically bound water limited the extraction, since complete dehydration makes

makes solution and digestability of the milk difficult. In the condensation process, we focussed our attention on the end product of the condensed material. Our planned solution to this problem was to reconstruct the original product by adding pure water to the condensed form.

We sought a base material for our experiments, which would allow maximum expenditure of energy and work on the development of the product, and at the same time, ensure a low cost of the end product. For this purpose, we used skim milk, an end product of the dairy industry. We do not utilize the valuable properties of this product. At the present time, it is used for feeding animals, and to a lesser extent, for making caseine. Because of its objectionable taste, it is not readily being consumed by the general public. To eliminate this factor, we added flavors which are capable of masking the objectionable taste. The flavors used were of natural origin: coffee, cocoa, almond, and various fruit juices. Although these flavors mask the objectionable taste of skim milk, their different properties resulted in production difficulties.

The condensation process used, differed from those applied previously. Due to rapid heat denaturization, the milk particles became unsuitable for consumption. Another difficulty was the possibility of flavor loss due to evaporation while using a vacuum, resulting in a tasteless end product. Previously applied instruments (spheric-condenser) were not capable of overcoming these difficulties. Because the material remains in the spherical condenser for a long time, the preparation becomes denatured due to heat accumulation in certain parts of the condenser. The film condenser was more suitable for our purposes. In this process, the material remains in the condenser for a very short time (four to forty seconds). Since the evaporating surface is extremely large, harmful effects are reduced to a minimum.

We produced four products by this method: coffee with cream, cocoa with cream, almond milk and black coffee (a coffee substitute). With the exception of the black coffee, we used skim milk as a base, containing 0.2% butter-fat, which we got from the dairy. The milk was pasteurized by a minute of heating to eliminate its sensitivity, and to transform the primary phosphates to secondary phosphates. In this way, we succeeded in preventing saturation. We enriched the protein content of our preparations by employing a homogenizer, at an atmospheric pressure of 250-300, to force powdered milk into the liquid milk.

In making condensed coffee with milk, the flavor of the coffee solution developed in the condenser. To avoid this, we prevented loose aromatic materials from being evaporated in the condensing process. We therefore did not complete the roasting of the coffee. Since the coffee was roasted only partially, the flavoring materials developed only at the end of the condensing

process. For the same reason, cocoa butter is used in flavoring cocoa with cream, since it holds the aromatic and flavoring substances, and prevents their removal by heat or vacuum. For this reason, we used more cocoa butter, and less powdered cocoa. In producing almond milk, the disintegration of amygdalin was completed in the condenser in the same way. Our experiments proved that it is not advisable to use sugar in the condensing process. The required sugar was added in powdered form at the end of the condensing process. This makes it possible to enrich the preparations with vitamins (e.g. vitamin C). Since the high sugar content preserves the preparation, it is not necessary to sterilize it again after condensation and packaging, providing the boxes were sterile in the first place. The condensed products can be preserved in PVC (polyvinyl chloride) packaging, containing no softeners.

To reconstitute original foods, we used water only. The condensed preparations are cream-like materials, easily soluble in warm water. The proportion of the solution is 1:4. The properties of the reconstituted preparation are the same as that of the original.

In producing condensed coffee (substitute), we followed the same principles as we indicated above, in describing the production of coffee with cream. The semi-roasted coffee flavor and aromatic materials were developed in the condenser. The proportion of the endproduct solution is 1:10.

We used metallic tins for packaging our preparations in the experimental process, because of the lack of other packaging materials. Laboratory experiments proved, as I mentioned already, that the preparations keep in packaging of synthetic materials. The condensed materials can be stored for years in air tight packaging. There are no special requirements concerning their storage.

The introduction of these preparations is also advantageous in peacetime and in civilian use. The weight of a milk container having a capacity of 25 liters, is nine kg. The weight of the cans of the condensed preparations necessary to make 25 liters, is only 1.5 kg. The gain in weight in packaging only, is therefore 7.5 kg. The condensed preparations can be preserved for years, whereas coffee with cream can be preserved for only four to five hours in warm weather.

Condensed preparations can be used advantageously in feeding an army. They ensure a centralized control of quality, and facilitate the making of coffee with cream, which in large percolators, could hardly be made without turning sour or burning. It is especially advantageous in feeding small units. In addition, in civilian life, it can satisfy the needs of tourists and vacationers (motels). It could also be used in improving the nourishment of minors. Almond milk could also find use in nourishing the sick.

Tenth Anniversary of the Hungarian  
Socialist Amateur Radio Movement

[Following is the translation of an article by  
Major Ferenc Banszegi in Radiotechnika (Radio  
Technique), Vol 10, No 10, Budapest, 1960,  
pages 290-291. CSO: 1271-S]

The radio clubs of the Hungarian Military Sport Association celebrate this month. The socialist amateur radio movement started ten years ago in Hungary. The many thousands of organizers did a successful job. We want to show on these pages the manifold activities of our clubs.

In the years preceding the fall of 1950, the Hungarian Shortwave Amateurs Association (HSAA, MRRE) was unable to create a radio amateur movement which would have served the aims of socialism. At the time of the foundation of this Association, the membership and the Board of Directors included several radio amateurs who remained loyal to the Horthy regime even in its vilest days and took part in the destruction of the country. They participated in the chauvinistic propaganda and provocative broadcasts aimed against the neighboring countries. Several of them were in the employ of the VKF II. (the Intelligence Service of Horthy's Defense Ministry). These people suggested the reconstruction of the Hungarian Shortwave Amateurs National Association (HSANA, MRROE) under a new name, after the liberation of Hungary. This Association was the Horthy regime's organization and intended to continue its work in the "usual manner". These "usual manners" did not include the instruction of the working youth interested in amateur radio activities, nor did they view radio connections on an international scale. The organization became infamous for its unconditional adoration of the Western technique and by its cynical condescension toward the radio industry of our homeland and that of the friendly countries and the Soviet Union. They despised the interested working youth and shoved them into the background. They supported politically unstable elements. The Association was completely devoid of socialist thought and reminded one of the shameful Horthy regime. The HSAA had a few members who were honest and supported the idea of socialism, but they were not strong enough to influence

the organization.

The HSAA was dissolved in 1950 and an amateur radio movement of socialist character was organized.

Fulfillment of the guiding goal: Instructing radio amateurs on a mass scale

During the past ten years, Pioneers, working youth and high school students joined our organization by the tens of thousands, learned the elements of radiotechnique and built their first radios. This was made possible by the patient work of several thousand instructors who teach beginner's and intermediate courses in the HMSA. They deserve recognition and gratitude.

Getting acquainted with the basic terms of radio technique, a large number of our young people chose the telecommunications industry as their vocation. Telecommunications research institutes, factories, and laboratories speak highly of our training methods. These are the places which absorbed our students. Many people who obtained university degrees in these industries started in our clubs and they are now recognized scientists in their fields.

Our "graduates" perform very well in the Army. When drafted, they use their knowledge of radio, and provide the Army Signal Corps with valuable cadres. A great number of these radio amateurs are outstanding soldiers who solve every communication problem coming to them. The commanders of the Signal Corps units acknowledge and value the instruction work of the HMSA [abbreviation not explained in source] radio courses.

Today the youth flood our organization to such an extent that our facilities, supplies, and the number of our instructors are no longer adequate. This increased interest in radio science is closely connected with the spreading of polytechnical education. Closer cooperation among the Communist Youth Organization (KISz), the Pioneer Association, and the HMSA will be necessary in the future to satisfy this demand for more education.

The healthy growth of the Shortwave Radio Amateur Movement.

The months following the fall of 1950 proved that a significant part of the old HSAA membership did not deserve the great political confidence of operating a radio transmitter-receiver. In this period the number of licensees dropped significantly. The HMSA instituted the policy -- to which it still holds -- of giving radio instruction and licenses to worker and peasant youth. In those early years a great number of experts, whom we asked to help us, did not agree with this policy and declined our invitation. Months passed, fraught with difficult and often seemingly insoluble problems. The enemies of the socialist radio amateur movement began to smile and anticipated the failure of our principles and goals. But the new short wave amateur transmitters slowly appeared, and respect for the HA signal began to grow.

These early (1951-52) stations had many technical and transmission shortcomings. This was the time of the ECO-system and of



the Windom-antenna. The stability and the tone volume of these stations were shockingly weak in many cases. The Ministry of Transportation and Postal Affairs showed great understanding in this period (just as it does today) to the socialist amateur radio movement.

By September 1956, nearly 200 amateur transmitters were operating in Hungary. The worker and peasant youth showed great talents by bridging every technical and traffic difficulty with hardly any help. Many of their transmitters gained respect and recognition on the international level. Some of our amateurs won competitions and gained foreign honor diplomas.

During the counter-revolution [1956] only a small part of the licensees deserted our ranks, and it was an even smaller number who turned against the People's Republic.

Since 1957 the development of the short wave amateur movement has been growing steadily.

Our amateur stations make an average of 500,000 connections yearly with every country in the world, and our licensees possess the hardest-to-get diploma in the world.

The Second National Conference of Shortwave Amateurs in 1959 decided to set a new goal for our licensees, collective stations and clubs. In keeping with the resolution of the conference, every station in the country embarked upon modernization. Especially good work was done in this direction by the HA 1 KSA (Gyor), HA 9 KOB (Miskolc) and HA 5 KDQ (Budapest) collective stations. Of the private licensees, Erno Primusz (HA 5 DU), Pal Varga (HA 5 DG) and Tibor Hidvegi (HA 8 WS) are doing outstanding work toward technical modernization.

The "Rotary Beam", "Cubical Quad" and "Ground Plane" system short wave antennas are replacing the old "Excentric Hertz" antennas which are of poor efficiency. We have also started using modern modulation systems. In this respect, the HA 5 KDQ SSB transmitter is doing a good job. Zoltan Kovacs's transmitter (HA 5 FE, Budapest) won an international triumph with his set, built with Soviet P-403 transistors, which contacted USA stations on the 10 meter band.

The VHF and "Rummy-Parties in the Ether" diplomas greatly raised the HA signal's reputation. This fast development and the outstanding results in traffic are in line with the resolutions of the Fourth Congress of the HMSA.

The Hungarian short wave amateurs comply with the spirit of sport and like to contact amateurs of any country, provided this contact does not overstep the limits of sporting experimentation. Alas, some Western countries (especially the West German amateur association and some West German licensees) put aside the rules of sport and used their equipment for provocative purposes.

The "Number 1 Democrats" of the US, the ARRL (the US amateur radio organization) in its international publication (Radio Amateur

Call Book Magazine) still denies (since the 1956 Hungarian counter-revolution) the existence of Hungary. We could quote several Hungarian proverbs fitting for this situation, but we don't think they deserve even that. It is a well-known fact that wisdom and recognition of historical facts has not been characteristic of American leaders in the past few years.

The Hungarian shortwave amateurs work in brotherly unison with the Soviet (DOSAAF) and the Peoples' Democracies (AVSAP, DOSO, GST, LPZ, SVAZARM) amateurs, and strive for further successes. The healthy international cooperation among the friendly countries [the other satellite countries] help the friendship of our peoples as well as the radio amateur movements of our countries. Our radio amateurs conquered the ultrashort waves.

The ultrashort wave (USW) activity is relatively recent in the HMSA. One of the pioneers is Janos Emmer (HA 5 AM). In the summer of 1954 we made the first connections in the USW range in the Bukk Mountains, at Bankut. This was at the 144/146 MHz band and had a range of a few hundred meters only. Since then the number of licensees has grown by leaps and bounds. The 144/146 MHz band was the first to be mastered. Our amateurs participated for the first time, in international competition in 1955 at which time we made our first international connections. Today, in competition, it has become a routine matter to be connected with Czech (OK), Austrian (OE), Rumanian (YO) and Yugoslav (YU) amateurs in the USW field. The first RB-HG (Ukraine-Hungary) competition was conducted in a comradely atmosphere. Our USW amateurs have a new goal now: they want to increase their range of communication as a next step. The initiator of this movement is Mihaly Csordas (HG 5 KBP) does a very effective job in the USW range. This station has an excellent transmitter-receiver, equipped with a 48-element revolving antenna. The stations of the HG 9 area (Borsod megye) also have, in general, very modern equipment.

Hungarian amateurs mastered the 420-460 MHz range (ca. 70 cm wave length) also. The national record is held by HA 9 KOB (Miskolc), who expertly contacted Bald Mountain, at Tokaj, from the Avas Hill (Miskolc).

The lack of the appropriate radio tubes hinders the work on both the 420 and the 1215 MHz band.

Our USW amateurs participate in the European USW Competition and in the brotherly SVAZARM [not explained in source], "Camp Days" (PD) Competition. These competitions are very valuable in teaching many details of technique, traffic, and communications, particularly when they are held on high mountain peaks. The predicted meteorite appearance in December will be of great help in breaking distance records.

#### The work of our radio clubs

There was only one radio club in Budapest in 1950. The real growth started in 1953. Today every megye [county] seat and many



other cities have operating radio clubs. The leading radio clubs are the Borsod Megye Club in Miskolc, (director: Jozsef Havran), the Gyor Megye Club at Gyor (director: Jozsef Nagy), the Komarom Megye Club in Tatabanya (director: Janos Lovasz), the Jasbereny City Club (director: Miklos Husznai) and the Hatvan City Club (director: Bela Hartmann).

We have introduced classification in the amateur radio movement. There are now eight Shortwave Sportmasters, four USW Sportmasters, and eight Construction Masters. In addition, our radio clubs have 35 First Class, and many Second and Third class amateurs participating.

Our radio clubs are politically and organizationally solid, and well prepared for the great tasks of the future.

During the past ten years the Party and the state (through the HMSA) have showed great willingness to develop an amateur radio movement for the purpose of strengthening our socio-economic system and the defense of our fatherland.

The policy of the HMSA will not change in the future. We are still going to give every opportunity to the people faithful to the worker-peasant state and we shall maintain the political clarity of the amateur radio movement. This organizational pattern will help the development of further technical improvements and the education of several thousand expert radio amateurs.

We have closed these ten years with success, and in the next decade we will continue the mass instruction of radio technique and the education of short wave and USW experts.

We are confident that our goals will meet with the approval of our youth and of the civilian and state authorities.

POLAND

Need for Better Tank Maintenance

Following is the translation of an article entitled "Czolgi moga jechac daleko" (English version above) by Major Czeslaw Gawel in Zolnierz Wolnosci (Soldier of Freedom), No 249, Warsaw, 21 October 1960, page 3.  
CSO: 1239-S.7

Because I encountered many examples which indicated the excellent operating condition of tanks during maneuvers, I intended to write a special report on the importance of properly preparing equipment prior to use. I gave up. In a casual discussion I heard an opinion which made me consider the problem once again.

"What is there peculiar in it?" Comrade Maslarczyk, one of those participating in the conversation, remarked. "A tank's technical potentialities are greater than the tactical problems assigned in peacetime training. Thus, in the hands of even an average driver-mechanic, each vehicle, even if not serviced systematically, may perform satisfactorily for the brief time the maneuvers last, especially since it is the custom to specially service army vehicles before use. Thus, it's as though their every-day condition would be inadequate for starting maneuvers without this preparation!"

Apparently at this point my face must have reflected great surprise, for the officer quickly concluded: "Naturally I don't mean to deny the efforts of the drivers, mechanics and technicians. That would be unjust! Under difficult conditions they go all out to assure the normal functioning of tank equipment. In acknowledging this one must, however, see at the same time the broader scope of the problem. It is a matter of training technicians, heads of sub-units and crews in the area of materiel maintenance under field conditions. And that's precisely why I wouldn't overrate the examples you mentioned." My interlocutor stressed the next sentence: "I maintain that armoured equipment needs no special preparation before use. Let it take to the field in the same condition as in the

garage, even if one of the vehicles is awaiting its regular overhaul. Then the technicians will have more opportunity to improve the organization of their work in the field."

Several days after the above conversation it happened that I found myself in a training area where sub-units of the Sudeten Tank Unit were holding exercises. The organizers of the maneuvers, probably holding the view which I mentioned above, hadn't prepared the equipment beforehand.

The tanks left for the maneuver area in the same condition in which they had just come from the tank depot. One of them was even in need of immediate repairs. A problem arose at once; tow it to the maneuver area or, instead, repair it on the spot so it can catch up with the company on its own ---

Later, during the first few kilometres of the route -- despite the fact that the equipment was functioning properly -- the officials in charge determined the extent of the damage in order that the assistant leader of the company, deciding whether the crew itself could make the repairs or needed the help of the repair division, had to organize repairs in the field. However, before leaving the garage, the director of the exercises, hoping to perfect the methods of servicing tanks en route, ordered 300 litres of fuel per tank to be dropped from the plans.

During the course of the run (it was held on a reduced area at a scale of one to ten) the organization of technical methods for short stops and the cleaning of filters, etc., was demanded of the assistant leaders for technical matters. In this connection the paradoxical situation arose whereby the company of Lt. Kardasz, riding in T-54 tanks which, as is well known, have greater potentialities than T-34s, "dashed" from the general column to the front. I must add that they "dashed" on (nobody stopped them) despite the fact that the 34s which were left behind could travel further; the officials in charge, however, would not agree to strain the equipment, which would violate regulations.

During the maneuvers it was said that the rules governing equipment utilization must be scrupulously observed in exercises. Otherwise, in the event of a tactical surprise, which often occurs in actual operations, tanks will be utilized beyond their potentialities and thus lose their combat value.

Officers Lazurko, Wohlmüt and Krzymowski told me, "Tanks can cover long distances, but only maintenance work, where indicated, and effected in good time, will guarantee that all of them will be in good working order -- and not

for just a day or two or for a week as is the case in maneuvers -- for a long period." At this point mention was made of the front-line experience of the First Tank Brigade, called the "heroes of Westerplatte", in which a scrupulous observance of the rules governing utilization resulted in a high operating efficiency of equipment throughout the period it was in combat.

However, the worst difficulties in a tactical-tactical situation arise from an attack so powerful that it would please artillerymen, anti-tank personnel, and engineers laying mine fields. After the skillfully organized defense (simulated), individual vehicles remain from the main body of the attacking tanks, which, in the opinion of the official in charge, have functional "damages", primarily as a result of combat. For example, near the enemy's first trench sits the vehicle of Corporal Markiewicz. "Damaged transmission casing" is what he read at this point from a card he took out of a sealed envelope which was given him by the official in charge. The vehicle of 1st Lt Kutecki has stopped because of "damage" to the clutch housing. How is he to lead the platoon? Consequently, the platoon leader immediately transfers to another tank.

There were other similar situations during the exercises. At times it became necessary to replace a "wounded" driver-mechanic, filling out crews by having recourse to other vehicles, etc. Just as though it were actual combat, the leaders of the sub-units -- Kedzierski, Kubiak, and Mazurek -- had to ponder this. The technicians had equally difficult problems. In the attack zone of the sub-units, which extended many kilometres, they had to push through to each "damaged" vehicle, evacuate it under fire to a safe spot, provide spare parts, make repairs in order to restore it to operating condition and return it to the combat area.

Cooperating closely with the tank technicians were the communications personnel, combatants and medic. When an immobilized tank sits in the field there are also damaged weapons, interrupted communications, and there may be wounded. Observing the efficiency of the corpsmen, I recalled one series of battalion maneuvers in which Private D. spent the entire time asleep in the infirmary; no-one had thought to simulate a situation requiring medical aid in such a "small" exercise.

Organizing the material and maintenance functions of tank sub-units is not easy. As illustration I offer the following minor example: on an exercise in the spring, the assistant technician in Captain Kaminsky's company "lost" his tank. He couldn't find it, for the director of the exercise "damaged" it in thick underbrush, at the same time

forbidding the crew to show any signs of life. Under actual combat conditions a situation may arise when technical observers on patrol may forget about the organization of points which are operating efficiently.

In getting acquainted with the process of exercises, I became more distinctly aware of the importance of the work done by technicians on the battlefield. They are not artisans bound to their workbenches but men whose professional qualifications must go far beyond mere craftsmanship. Without solid tactical background as well as a constant perfection of their organizational skills, it is impossible to consider them fully equipped for actual operations -- lengthy operations. And leaders are perceiving this more and more!

At this point one may pause to consider whence comes the frequently encountered "forgetfulness" to create technical problems to be solved on maneuvers. Let us at least mention some of the causes about which I learned both during the above-mentioned exercises, from officers Bozek, Stecki and Wojcik, and later in the Schooling Inspectorate and in the Tank-maintenance Service of the Ministry of Defense.

It was explained to me that one may sometimes encounter a certain insurance on the part of technical personnel. Why make technical inspections or minor repairs in the field, under conditions more difficult than in the repair shops, when they can be made ahead of time in camp, avoiding any unpleasant surprises later? Favoring such a custom is the practice of certain directors of exercises, who plan a definite, rapid tempo for the activities of the tank sub-units, disregarding the necessity for performing during the process functional tasks set forth in the instructions. The basis for such an attitude stems from the fact that tanks have high potentialities, and the certainty arises that the tank personnel can perform every assignment.

I once heard an official in charge on maneuvers -- an Army engineer -- point out to the sub-unit commander that in figuring the average speed of the column he had failed to consider the need for functional inspections. At this the latter burst out laughing: "Why bother? In war time nobody will pay any attention to such trifles. The point is to carry out our assignments in the shortest possible time. Furthermore -- just let the technicians try to cross me up!" Here is the origin of the "insurance" on the part of the technicians. It is a vicious circle.

Such an attitude, fortunately encountered only sporadically, is certainly fallacious. It is precisely in



time of war that the value of each means of fire-power increases greatly, and the least damage to equipment decreases the combat readiness of a sub-unit and may have serious consequences. Military actions are not exactly "tours de Pologne", in which a contestant can simply drop out of the race...

It is not surprising that more and more notice is being taken of the need for tactical-technical problems in the exercises of even the smallest sub-unit and for the systematic training of line technicians. This has been so during the past training year. Elements of tactical-technical training have appeared also in the instruction methods course -- a course organized by the Schooling Inspectorate of the Defense Ministry. This emphasizes the fact that even at the earliest stages of training it is possible -- in fact necessary -- to take into consideration the perfection of materiel maintenance techniques for sub-units. This need must be handled without delay by staff officers in charge of planning training.

Tanks can travel long distances, and the men responsible for their combat readiness come not from just one but dozens of "factories on wheels", working in every tactical group, every unit and sub-unit. They are the ones who may play the decisive role on the battlefield by quickly restoring a damaged tank to combat readiness. Perfecting the organization of the work of these often tiny "factories on wheels" is an important goal of the resolutions adopted by the IV Plenum of the Central Committee of the PZPR -- the obligation of each commander, technician, and member of the party.



### Polish Bombing Competitions

Following is the translation of an article entitled "Zawody Lotnictwa Bombowego" (English version above) by 2nd Lt K. Szelag in Wojskowy Przegląd Lotniczy (Air Force Review), Vol XIII, No 10, Warsaw, October 1960, pages 31-35. CSO: 1241-S.

Three months ago a flag was lowered, signalling the start of the Second Bombing Competitions. It is time to think about the next ones. In this case, should the records of this year's competitions be considered as complete? Perhaps because of the very fact that the Third Competitions are coming up, we should return to those very tense June days...

Let us recall the excitement brought by the last competitions, and the many heated discussions among officers before, during and after the competitions. The contestants themselves remembered the aerial contest a long time. But what is left of all this today? It is not pleasant to realize how little of these discussions appeared in the newspapers and how much never left the garrison.

The Second Bombing Competitions were in a class above the preceding ones. Because of the organization of the competitions, the degree of preparation of the participants and the truly sporting atmosphere, the competitions this year were indeed impressive. For the first time in the short history of the competitions we saw a first-rate sporting performance.

In the last competitions the best trained crews and teams in the bomber force participated. In the team trials groups that were excellently prepared for the execution of tasks far more difficult than those of the previous year participated. Among those competing for the team championships were the team of Captain Wladyslaw Bira, Captain Henryk Baranowski and Captain Zbigniew Michnowski.

The individual competitions provided many surprises. A frantic battle for the honorary title of "Champion Bombing Crew" continued up to the last day. In the individual

competitions as in the team competitions, a number of the best crews participated. One should here mention, among others, the crews of Captain Jerzy Matuszewski, Lt Jozef Cholewa, last year's individual champion, Lt Edward Charyszyn and Lt Stanislaw Lipowski.

The fight for the championship in the Second Competitions was all the more interesting in that all the entrants were of the same calibre. All without exception had identical chances to win. Bets or predictions on one favorite or the other were upset, for each test brought basic changes in the records of points awarded, and each day brought new surprises. The crews and teams were very cordial to one another on the ground, but in the air they were strictly on guard and competed determinedly.

Three crews attracted special attention in the team competitions. They were those of Captain Matuszewski, Captain Michnowski and Captain Bira. The first team took first place during the elimination runs in the team competitions and the individual competitions. However, this team soon lost a number of valuable points in the bombing and aerial reconnaissance competitions, thus decreasing their over-all standing. The team of Captain Michnowski, which came in second in 1959, moved out in front. From day to day this team achieved results in the individual competitions which, though perhaps not the best, were comparable to those of the others. It was one of the most interesting teams. Of those on the team, mention should be made, in addition to the leader; a long-time trainer and instructor on the IL-2, IL-10, and IL-28, of the following: the pilot, Lt Tadeusz Trzevuniak; the navigator, Lezek Lik; and the gunner, Staff Sergeant Czeslaw Przedwojewski. During the past year the entire team trained very conscientiously for the competitions.

Speaking of winners, let us recall the crew whose lot it was to hold this title in 1960-1961. The individual bombing winner was the crew of Lt Edward Charyszyn, who very effectively moved toward the top of the list in the Second Competitions, taking fifth place on the second day. After that day the crew bettered their standing, and their total pushed them two places higher. On the last day of the competitions they fought a decisive battle with the crew of Lt Lipowski. The difference in the totals of the two crews amounted to barely 100 points. The results of the night bombing of a target on a bombing range from a high altitude would decide which would be the winner. The crew had to put at least one bomb on target.

Flight conditions on the course to the range were exceptionally bad. The cloud ceiling was 1800 metres. At

7000 metres Lt Charyszyn's crew was constantly flying in clouds and rain. Ice was forming on the plane. The cockpit was almost completely frozen. Storm clouds were also encountered. One can imagine the great joy felt by Lt Charyszyn's crew the next day when the judges informed them that not just one bomb hit the target, but four.

Lt Charyszyn and his reliable navigator Robert Michajew proved that they have a well trained crew, the members of which work together splendidly. The crew of Captain Matuszewski and Lt Cholewa demonstrated the same fact. The latter crew carried out its night task under even more difficult conditions. From takeoff to landing the pilot was flying in clouds. If only the clouds had been the main obstacle! Flying at high altitude, Lt Cholewa learned, at one point, that he was unable to decrease the speed of his left engine from maximum to cruising speed. Though the ace was plagued by bad luck from start to finish, he nevertheless displayed real mastery of flying techniques. Despite the fact that the crew did not place among the winners, it won broad recognition and sympathy.

The remaining crews and teams displayed real skill and precision in the execution of complicated combat maneuvers. The crews and teams participating in the Second Bombing Competitions during the course of their training in the 1959-1960 period achieved completely satisfactory results. The competitions were a reflection of this.

The character of the tasks executed by the bomber force demands, in the first place, that one examine the degree of proficiency in flying and navigating and skill in hitting the target on the ground. Let us begin with bombing. The contestants achieved the best results in the low altitude individual and team bombing of an objective on a target range. All the crews accomplished this task. Connected with this was the next event, that of reaching a specified point in a specified period of time. It is no exaggeration to say that the crews mastered this requirement excellently. The crews reached the target with a difference of only one to four seconds.

In analysing the results achieved by the crews and teams in the separate events, one must remember that the competitions took place under exceptionally difficult atmospheric conditions. The commission and, even more, the contestants themselves realized this. In performing their tasks the crews very often encountered storm clouds on their course. They appeared where they were least expected. The average wind velocity at 6000 or 7000 metres exceeded 100 km per hour.

Because unfavorable conditions hindered the carrying

out of a number of events and frequently threatened the safety of the crews, it was concluded that the time selected for the competitions was not a propitious one. It is therefore to be hoped that the next competitions, the third, will be held later in the year when there will be fewer storms and lightning, etc.

The suggestions made concerning changes in the scheduling of the competitions has nothing to do with "burying one's head in the sand" when faced with difficult conditions. The crews do not fear this. However, they do fear dangerous conditions, and it is the storm clouds which create this danger.

Let us note one more achievement of the Second Competitions. The teamwork of the crews and teams and the close cooperation they displayed. Without this it is impossible to think of good results. The mutual aid, understanding and comradeship were factors which to a high degree decided the outcome.

It is important to recall the suggestions and observations which were repeatedly made in the course of official and unofficial discussions. One must consider what means should be employed to perfect the organization of the competitions, what should be done to improve the present rules governing the competitions and adapt them to needs and possibilities. The fact that much will need to be changed, including the rules of the competitions, cannot be doubted.

The Second Bombing Competitions must be considered successful and useful. We would like the Third Competitions to be even more splendid and effective. Therefore, it is vital to remember the suggestions and observations which were proposed during the last competitions and which may be helpful to those who organize the next. In a word, one should consider discussing this problem in the columns of Wojskowy Przegląd Lotniczy. This should be now, for time is flying, and soon the flag signalling the third competitions will be fluttering on the pole.

## YUGOSLAVIA

### Effect of ABC Weapons on Food and Water, Their Protection and Decontamination

[Following is the translation of an article by  
Rudi Krsanac in Vojno-Ekonomski Pregled (Military  
Economic Review), No 3, Belgrade, 1960, pages 180-  
87. CSO: 1301-S.]

Every ABC attack directed at human forces, industry, or defense installations will have a harmful effect on the food and water supply of the imperilled region. In addition, enemy agents may try to penetrate into areas where Army supply stations and depots, water supplies, etc., are located, in order to contaminate food and water. When retreating from designated premises the enemy may leave behind part of their food and water supply, having previously contaminated it.

The danger of the action of ABC weapons on food and water is evident in RBC contamination and in the dire consequences which may befall a whole unit should contamination not be discovered in time, due to the fact that food and water are taken into the organism where the effect of RBC agents is devastating.

#### Effect of ABC Weapons on Food and Water

The effect of ABC weapons on food and water depends on the type of weapons used (atomic, biological, or chemical), the degree of contamination, the type and chemical composition of the food, the containers in which food is packed, and on the general measures undertaken for the protection of food and water.

Atomic Weapons: Of the three aspects of action of atomic weapons, radioactivity has the greatest effect on food and water.

The striking (mechanical) action brings about physical damage of packaging (wooden and glass) and of such articles as apples, plums, berries, potatoes, onions, tomatoes, and similar products. Damage is complete within an area of 600 m from ground zero; to a large extent it also depends on the power of the weapons used.

The thermal action expresses its destructive force by igniting wooden, canvas, or paper packing in an area up to 1,500 m from ground zero (if it is not specially protected). Ignition of



packaging will produce charring or carbonization of food.

The effect of radioactivity on food is more complex and dangerous. All food, regardless of storage, within an area of 700 m from ground zero will be exposed to the action of neutrons in large densities. By penetrating packaging and food, these neutrons produce changes in the atoms (ionization). Depending on the chemical composition of the packaging, the food itself becomes radioactive (inducted radioactivity). At a distance of 700-1,200 m inductive radioactivity resulting from the action of neutrons is considerably lessened, and beyond 1,500 m there is none.

The following chemical elements are particularly receptive of induction (inductive radioactivity): phosphorous, tin, zinc, chlorine, sulphur, sodium, potassium, and bromine. The first five elements emit radioactivity of minor intensity, i.e., slowly, over a period of several days, weeks, and also months; while the last three elements emit radioactivity of high intensity for some hours duration. Almost all foodstuffs, except pure carbohydrates, contain one of the above elements and almost all are susceptible to inductive radioactivity. Much phosphorous is present in cocoa, beans, chocolate, yeast, peas, white onions and fish. Tin, zinc, sulphur, potassium and bromine are present in foods rich in mineral proteins and fats: beans, rice, lettuce, flour, meat, and milk. Cooking salt consists of sodium and chlorine and is prevalent in milk and meat products.

Inductive radioactivity, depending on the chemical composition of the food, slowly decreases and finally ceases.

Thus far it has been established that radioactivity produces the following changes: powdered skimmed milk, when mixed with water, changes odor and taste; bread made of oatmeal changes taste and odor; flour loses the substance which gives dough its cohesiveness; butter becomes stale and margarine loses its freshness; salt becomes lumpy; beer changes taste; cooked meat becomes dry, stringy and tasteless.

Food exposed to radioactivity must be isolated until radiation decreases to harmless intensities and, in so far as it has not spoiled by this time, it may, under difficult conditions of warfare and when no other sources of supply are available, be used for consumption. One must, however, keep in mind that this food is subject to rapid spoilage.

In addition to radiation food may be exposed to radioactive fall-out, not only in the area of atomic-weapons explosion, but also in a much larger area, downwind. Radioactive fall-out (radioactive dust) induces surface contamination of food or packaging, which is in every instance of long duration.

Due to its chemical composition water does not, except to an insignificant degree, become inductively radioactive. On the other hand, inductive fall-out (dust) contaminates water very strongly. Sea water, due to its containing salt (sodium and chlorine), and



other mineral waters are susceptible to very strong inductive radioactivity.

**Biological Weapons:** Via food and water biological agents can be induced directly into the organism of living beings. Because food and water are always suitable for the transmission of various diseases, the enemy will strive by various means to bring about their biological contamination.

Food of animal derivation may be a source of infection if it originates from diseased animals, or if it is infected in another manner. Thus, for example, milk is a means of transmitting tuberculosis of the intestines and food-rot; infected meat may transmit cattle-plague; meat preserves and sausages may be the cause of various poisonings, the most dangerous of which is poisoning produced by the bacillus botulinus.

Food of vegetable origin, especially fruit, as well as water, may transmit cholera, dysentery, cattle-plague, stomach typhus, spotted fever, etc.

**Chemical Weapons:** The nature and degree of contamination of food and water with BO [sic] depends on the following: type and characteristic of the BO used, concentration (i.e., density of contamination), type of food, and type of packaging.

Food in ordinary packing and water which are exposed to the action of clouds of gas or smoke (phosgene, chloropicrin, chloracetophenone - but not adamsite) are not regarded as contaminated, since they can be used after airing for some hours. An exception is food which contains much water, such as fruit and vegetables, where hydrolysis of phosgene results in the formation of chloric acid which is harmful to the organism. Adamsite as poisonous fumes contains arsenic; as a compound it is very stable and therefore long retained in food and water, which must therefore be regarded as contaminated.

Persistent BO (DBO), such as yperite, lucite, and tabun are most dangerous in their liquid state, because they have strong toxicity, great persistence, and the power of penetrating deep into foodstuffs. The power of a liquid BO to penetrate into food amounts to approximately 1-3 cm in articles in powdered form, 3-6 cm in granular food, and 1-3 cm in meat; in fats and oils they penetrate through the total depth, since fats and oils are very good decomposers of the above mentioned BO. If food is contaminated only with fumes of BO, these can be removed with airing, and the food may be used for consumption.

The most severe contamination of water is caused by liquid DBO, due to the fact that they retain great stability in water (they decompose poorly and do not hydrolyze), as well as by some poisonous fumes (e.g., adamsite, and others containing arsenic). Other BO decompose in water and hydrolyze sufficiently rapidly under normal conditions. Such water may have an unpleasant odor because it contains chloric acid and other products of hydrolysis.

## Protection of Food and Water

Bearing in mind the above described effect of ABC weapons on food and water, their consequences if used for consumption, and the very complex process of their decontamination, we must recognize the reality of the problem of timely protection of food and water from contamination. Efficient provision of units in modern warfare depends on the satisfactory solution of this problem.

Protection of food and water is a problem that must be solved by the adoption of the appropriate measures prescribed by military regulations, and by packaging food in the required protective packing.

The rules designated in military regulations for the protection of food and water from contamination by ABC weapons include the following:

The location of supply stations and storage depots in regions less threatened by ABC devices, on plots of ground less retentive of RBC and further away from objectives (i.e., targets) which might lead to an ABC attack by the enemy.

Whenever possible (availability of time, resources, and manpower) food should be stored in solidly built underground or excavated shelters. Shelters represent the most certain protection from ABC attack, even 500-600 m from ground zero of an atomic-weapon explosion, provided they are hermetically sealed. If such shelters cannot be built one must utilize underground cellars, huts, existing buildings, tunnels, caves, etc.; they must be made suitable for the intended purpose and hermetically sealed. The building of new structures, or the modification of existing ones, should be carried out according to directions in Prirucnik za izradu Bratnih intendantskih objekata (Manual on Wartime Supply Installations) or in Prirucnik za inzinjerske radove u pesadiji (Manual on Field Fortifications on the March).

In open territory, time not permitting the construction of the above objectives, it is mandatory to cover the food, etc. This is best done with a layer of earth 5-6 cm thick, since it offers most certain protection (except from inductive radioactivity). Covering with branches, tent cloth, etc., offers no protection from either inductive radioactivity or the effect of heat, in an area 1,500 m from ground zero of an atomic explosion.

Use must be made of transportation by night. When the opportunity exists one should make use of special vehicles with closed bodies. If one used open-topped (ordinary) vehicles, it is mandatory to cover the food with tents or other suitable material.

Kitchens and cooking utensils should be placed in shelters, huts, underground cellars, buildings, or under the eaves. Care must be taken to protect all of the equipment used in the preparation of food.

Places for the preparation of food, stations, storage depots,

and water supplies must be guarded against the action of enemy agents and from access by unknown persons. For this reason one must increase vigilance and observation, keeping in mind that the enemy will often attempt to introduce biological warfare agents in this manner.

Because a large number of fires may occur from the use of atomic weapons, organization for fire protection is necessary.

A surveillance organization should be formed to ensure the timely detection of ABC attack, whether by artillery, projectiles, or aviation.

Measures should be undertaken for the camouflage and secrecy of stations and storage depots.

Sanitary measures must be taken with regard to places of food storage and water supply, and for maintenance of cleanliness of the population, transport vehicles (for transport of food), cooking utensils and other cooking equipment. Inspection is necessary for all people handling food and water.

Constant inspection of food, water, meat and livestock designated for slaughter must be maintained by the sanitation-veterinary authorities.

Selection of packaging for food for purposes of preservation and protection from ABC contamination poses a special problem. Wooden barrels, wooden boxes, and paper bags only partially protect food from contamination and therefore should not be considered for packing food under conditions of ABC warfare.

The general requirements sought for food packaging are as follows: it must not permit penetration of radioactive dust, biological agents and war poisons; it must, however, allow the passage of air for the safeguarding of freshness and fitness of the food.

It has been established thus far that some plastic substances, presently widely manufactured throughout the world, best fulfill the above conditions. They include pure polyvinylchloride, polyofilm, and polyethylene. The listed materials completely check the penetration of radioactive dust, biological agents, and BO in the form of gases, vapor or smoke, and delay penetration of heavy BO (yperite, lucite, tabun, etc.) for a period of 30 minutes to 1 hour, which is sufficient time for the food to be removed from the contaminated packing. On the other hand, the above mentioned materials are pervious to air, which is necessary for maintenance of freshness of the contents. This wrapping must be predominantly used in the packing of fruit and vegetables (boxes for the packing of fruit and vegetables must be lined on the inside), coffee, flour, and various vegetables that are boiled (fresh peas, beans, etc.), due to the fact that these products would spoil quickly without air.

Some articles, the preservation of which does not necessitate constant access of air (dry beans, peas, rice, etc.), or those that have to be protected for only a short period of time, may be kept in waterproof barrels.

Glass containers (bottles and jars) used for the storage of various liquids and preserved vegetables give protection from RBC agents, provided they are hermetically sealed. Here one must keep in mind the mechanical effect of explosion (earthquake): these containers may burst at a distance of 1,000 m from ground zero, even when stored in shelters. Their contents will be destroyed.

Tin packaging (boxes, cans, and casks) offer the best protection for preserved products (meat, fish, and vegetables), fats, various liquids, etc., from all aspects of RBC action except inductive radioactivity.

Wooden boxes and cardboard cartons with interior lining of waterproof or special paper also provide protection of food, provided they are hermetically sealed.

#### Decontamination of Food and Water

Decontamination of food and water from radiological, biological and chemical agents is a complex and delicate process.

It is characteristic that one cannot make use of chemical decontaminants (chemicals) in this process, since their action will harm the food.

Decontamination is accomplished on the spot where contamination occurred, or in its immediate proximity.

**Radiological Decontamination:** Food which has, due to the action of neutrons, itself become a source of radioactivity is subject to a process of natural decontamination. This food and its packaging must be removed to an isolated place where it will be protected from inclement weather. With the help of detectors one must periodically trace the decrease of radioactivity; when this falls to a permissible dosage, and if spoilage has not occurred, the food may be consumed, provided permission is granted by the sanitation authorities and there is a shortage of other sources of supply.

Methods used to decontaminate food and packaging contaminated by radioactive dust depend on the nature of the goods as well as on the type of packaging.

As regards food kept in glass jars and bottles, tin boxes, cans and casks, in containers of waterproof or rubberized canvas -- i.e., in packaging which is impervious to water and through which radioactive dust has not penetrated to the contents -- it is sufficient to carry out a thorough decontamination of the packing, this being done by washing under a strong stream of clear water, or with the addition of soap or other cleansing agents.

Packaging which permits water to penetrate -- the contents after a long period of washing (cardboard cartons, paper bags, wooden, hermetically sealed boxes, etc.) is decontaminated in the following manner: the packaging is moistened from the outside with the help of a wet rag (for the purpose of making the radioactive

dust stick to the packing), it is opened carefully and, after one has ascertained that the food is not contaminated, it is placed in new containers.

Flour stored in ordinary barrels is decontaminated by splashing the barrel with water, first from one side, then from the other. The splashing is done gradually, so that the water will penetrate into a layer of flour 1-2 cm in depth. Water and flour will form a dough which remains attached to the barrel. The barrel is then opened and the flour shaken into a clean container. If one suspects that pieces of dough containing radioactive dust have fallen along with the flour, the flour must be passed through a sieve.

Products such as beans, peas, rice, sugar, coffee, bread, yeast, macaroni, etc., into which radioactive dust has penetrated, are impossible to decontaminate completely. If the possibility exists, one removes a surface layer 5-10 cm thick, which is then destroyed; the deeper layers may be used after inspection.

Articles in liquid state (oil, vinegar, milk) cannot be decontaminated.

Solid fats are decontaminated by removing a surface layer 1-2 cm thick.

Potatoes, turnips, beets, cabbage, and other vegetables are decontaminated with longer washing under a stream of water and the later removal of the upper layer (rind).

Sausages, meat and fish are also washed under a stream of water. If decontamination is unsuccessful one removes the surface layer with a knife; in sausages one removes the skin (outer wrapping).

Food contaminated by radioactivity must be stored separately from clean (uncontaminated) food and may be consumed only when other food is not available. Before actual preparation for consumption, the decontaminated food must be carefully washed in water and submitted for inspection to the sanitation authorities.

Food and packaging that cannot be decontaminated is destroyed. This is accomplished by burial in the ground, not less than 2 m deep, as far away as possible from habitation or sources of water. Before burial, petroleum, naphtha, or other liquids with unpleasant odors must be poured on them; they may also be burned.

Decontamination of water affected by radioactive dust can be accomplished by the following methods: sedimentation with addition of aluminium salt, filtration and, most effectively, distillation.

Biological Decontamination: Heat is used for the destruction of biological agents in food; by boiling, baking, frying, or heating in special apparatus. Whether disinfection will be achieved depends on whether the food has been exposed to heat for a sufficiently long period of time.

For purposes of disinfection milk must be boiled steadily 10 minutes.



Meat in pieces 1 kg in size must be boiled for 2-3 hours; it must be decontaminated according to the type of biological agents with which it is infected, if this be ordered by the sanitation authorities.

Food which is eaten raw (lettuce, fruit, etc.) must be thoroughly washed under a stream of clean water. It is advisable that these articles be immersed for about 15 minutes in a solution of chloride of lime after washing.

Glass jars, tin cans and casks, containers made of waterproof canvas, and similar containers in which food is packed must be thoroughly washed in a solution of chloride of lime or, if it is unavailable, with warm water and soap.

Eating utensils and cooking equipment is decontaminated by boiling in water to which has been added a 2% solution of bicarbonate of soda, or by immersing for about 15 minutes in a 0.5 solution of chloride of lime or chloramine.

Water for drinking and cooking purposes is used in battle, and under field conditions only if it is disinfected by boiling, chlorinization or iodization, or if purified by filtration.

Chemical Decontamination: The principle means for chemical decontamination of food are sunshine, air, and water.

Food that has been contaminated with BO from the group of asphyxiators, blood BO, and some tear gases (phosgene, chloropicrin, chloracetophenone), and this in small concentrations, has to be thoroughly aired (2-3 hours in summer, 7-8 in winter). When the concentration of the above BO agents is great, airing has to last up to 24 hours. In the latter case, articles containing a high percentage of water (fruit, vegetables, meat, milk, etc.) probably will not be useable, due to the process of hydrolysis and the appearance of chloric acid.

Adamsite as poisonous smoke contaminates the surface of food. Because of its great power of persistence it cannot be removed by airing and is very dangerous due to its arsenic content if taken into the organism via food. In order to remove it from food one has to remove the upper layer: 2-3 cm as regards flour, 5-6 cm for grain. The contaminated layer that has been removed must, as regards some products (beans, peas, rice), be cleansed with long washing under a stream of water. Food that cannot be washed (various ground products) should be destroyed.

Foods that are contaminated with BO fumes in small concentrations (yperite, tabun) must be thoroughly aired (24-48 hours) and in preparation for eating, must be cooked for a longer period of time. If the concentration of BO fumes is great, the upper 5-6 cm are removed. The removed upper layer has to be aired for several days, the lower, clean layer from 3-4 hours.

Food contaminated with persistent BO in liquid form cannot be decontaminated entirely. One may consider the removal of a layer 3-4 cm in depth for ground products, 5-10 cm for the rest. The



removed top layer must be destroyed; the lower part may be used after a short period of airing and inspection.

Flour that has been contaminated with persistent BO can be decontaminated in the manner perscribed earlier (decontamination from radioactive dust), i.e., splashing the barrel with water which penetrates 1-2 cm in depth. In this process, dough forms on the interior side and remains, together with the BO glued to the barrel. Afterwards the dry flour is shaken into a clean container.

Lard, oil and milk contaminated with liquid BO, or with strong concentrations of their vapors, cannot be decontaminated because the above mentioned BO dissolves in these articles.

Domestic animals which have been exposed to the action of BO must be slaughtered as soon as possible. If they are contaminated by asphyxiators, the meat can be used after a preliminary airing for 24 hours. If they have been contaminated with yperite, the meat can be used if one discards the layer under the contaminated skin. If the applied BO has an arsenic base (lucite), or if it is a nerve gas, the animal must be destroyed, since it is toxic.

Glass, tin and waterproof containers can be decontaminated with a solution of chloride of lime, followed by the mandatory washing for 20-30 minutes.

Food and packaging which has been removed for destruction must be burned or buried.

Decontaminated food must be kept separate from pure food. It may be consumed only after detailed inspection and on the approval of the sanitation authorities.

Water may be contaminated with liquid DBO and adamsite. Water contaminated with yperite may be fit for use (for drinking and the preparation of food) after complete decontamination with a combination of sedimentation, boiling, and filtration. Water contaminated with nerve gas may be used only for cleansing and washing, and this only after it has been thoroughly boiled; water contaminated with lucite and adamsite cannot be decontaminated.

Authority and Procedure of National Militia's  
Officials with Regard to Military Personnel

Following is the translation of an article by Bogdan Perovic in Narodna Milicia (National Militia), Vol XIII, No 8, Belgrade, 1960, pages 1-9. CSO: 1315-S7

The maintenance of public order and peace and the protection of public property are the basic duties of the National Militia. In the execution of these duties officials of the NM (Narodna Milicia -- National Militia) are authorized and duty bound to undertake that which is prescribed by law to restore law and order should a citizen, through his actions, break the law, disturb public order and peace, or commit a criminal act or violation. The officials of the NM are also authorized and duty bound to take the same actions against military personnel who commit criminal acts or violations, if the proper military authority is not located in that area.

In the earlier "Regulations for the Execution of Duty by the NM," which was published in 1949, the question of the authority and procedures of NM officials with regard to military personnel was not determined. This question at that time could not be included in the Regulations because it was neither covered in the Regulations of the NM nor any other law, nor was there enough practical experience to regulate it. However, in every day practice the officials of the NM met this problem and had to intervene in violations involving military personnel, even if Regulations did not exist to justify their intervention. Because of the nonexistence of regulations covering this question, the actions of NM officials against military personnel were different and in each instance irregular. The interpretation of the character and extent of the authority of NM officials against military personnel was also varied. The view existed that the authority and procedures of NM officials with regards to military personnel should be the same as those concerning other citizens. There also existed the view that as regards military personnel there should be certain limitations. Concerning this, the question often arises to the NM official as to what authority he has and what should be his procedure in a question involving military personnel. Gradually this question has been governed through individual laws and other legal regulations, mainly through the regulations of the JNA (Jugoslovenska Narodna Armija -- Yugoslav People's Army), thus on the occasion of the publication of a new "Regulations for the Execution of Duty" this question was classed as a separate legal regulation and there existed a wealth of many years practice and experience to enable this question to be included in the provisions of the new Regulations. It was necessary only

to gather and sort out the acquired experience and to generalize and legally outline the individual provisions which were discarded for a separate regulation.

The provisions of the new Regulations concerning the question of the authority and procedures of NM officials with regard to military personnel are entirely based upon already existing legal regulations which partly cover this question (Law on the Yugoslav People's Army, Law on National Defense, Law on Military Courts, Law on Criminal Procedure, Basic Law Concerning Violations, Law on Internal Affairs Organs, Regulations of Service of the JNA, and the Statutes of the Military Police), or are based generally in legal form on current practical experience concerning this question. In compiling this material into new regulations, the extent of the authority and rights of NM officials, precise regulations and limitations on those measures which are necessary for the execution of duty, the protection of general and personal rights and interests of the citizen and the practical procedure which are ordered by the provisions were all weighted to make impossible different interpretations and to ensure a single procedure for NM officials with regards to military personnel.

The basic characteristic of the provisions of the new Regulation which regulates the authority and procedures of NM officials with regards to military personnel is that in a number of situations it is more strict, more limited than with regards to other citizens. These limitations were necessary due to the general status of a military person and some were already established in other legal provisions and responsible to positive needs of the service, thus the Regulation had to accept them. Regarding the use of coercive measures against military personnel, the Regulations fundamentally accepts the fact that NM officials may use the same measures with military personnel as with other citizens, but the use of some of these measures demand somewhat different conditions where a military person is concerned. This is true primarily because there are authorized military organs which, according to existing military provisions, are always obliged to step in when a military person is involved. Only when there does not exist such an authority in a particular area, or when it appears that its intervention will arrive too late, do NM officials undertake the necessary measures against military personnel. Regulations have been effected, therefore, to create a stronger cooperation between NM officials and these military authorities in all questions concerning action against military personnel. Along these lines the Regulations anticipate the obligation of the NM official to seek the aid and intervention of the military organ whenever possible or, if not this, then to inform them of procedures taken against a military person who has committed a criminal act or violation. If, due to the impossibility of contacting the military organ to intervene or if its intervention might arrive too late and consequently damage might be done to important civil property or social organizations, the NM officials are to undertake certain coercive measures against the military person and immediately inform the military organ. If necessary, they will take him to the nearest military unit or command. If this is not possible, they will

inform the military that they are holding such a person. In addition, when prescribed coercive measures are used against a military person, a report of this must not only be made to the military organ but also to the appropriate organ of internal affairs, the Federal State Secretariat of Internal Affairs, with the aim of judging the legality and correctness of those procedures and for mutual decision with the responsible military organ in the event of unsolved or vague questions. In addition to this, throughout the provisions of the Regulations there is emphasis on the duty of the NM official, when involved in an intervention against a military person, to be careful of the military person's reputation and to avoid anything that might injure it. In many cases it will not be necessary to file an official report. However, on the other hand this does not give a military person any special privileges. He is obliged to be certain that his behavior does not warrant the intervention of a NM official in any manner.

There is a difference in the procedure followed by a NM official when the military person involved is wearing his uniform and when he is in civilian clothes. This difference is always stressed in the Regulations. It is based on the fact that if a NM official does not know the military person personally, does not immediately see his identification papers, or the person does not indicate that he is a military person, the NM official has no way of knowing. Thus, according to the Regulations, proceedings against such a person must be the same as those against other citizens until it is established that military persons are involved. When the NM official establishes that the other is a military person, then the official is obliged to treat him in the manner prescribed for a military person in uniform. If a person wishes to secure for himself "military-personnel treatment" he must, without evasion, furnish proof, that is proper identification, to the NM official. The identity of such a person or the indication that he is a military person will be established by the NM official in the manner and through the means prescribed by law for other citizens. When a person in uniform is involved, the JNA accepts the supposition that he is a military person until proven otherwise.

The Regulations do not cover the concept of what is a military person, since this is already handled in military regulations. The concept of what is a military person is accepted from article 21 of the Law on the Yugoslav People's Army which states: "The term military person, as used in this law, is understood to mean soldiers serving their military obligation, students of military schools, active noncommissioned officers, officers and military officials, as well as personnel from reserve components when they enter active duty in the Yugoslav People's Army." This same concept of what is a military person is given in Article 11 of the Law on Military Courts. To make this question clear, it is necessary to remark that those who enter active duty from a reserve component include: soldiers, noncommissioned officers, officers, and military officials. These people become military personnel everytime they enter the JNA for military training or enter the military service for some other reason. They retain this status until dismissed from



military training or other service.

According to the provisions set forth in the Regulations, the authority and procedure of NM officials with regards to military personnel are:

1. The Payment of Fines on the Spot by Military Personnel

Point 32 of the Regulations for Execution of Duty states: "The payment of fines on the spot for violations committed by a military person is executed according to procedure and conditions stipulated in Points 29-31 of these Regulations. Points 29-31 stipulate the conditions and procedures for payment of fines by citizens who commit a violation for which payment of a fine on the spot is properly prescribed. According to this, military personnel are to be treated in this respect the same as ordinary citizens. The basis for this legal decree is found in Article 150 of the Basic Law on Violations, in which is stipulated the conditions and procedure for paying on-the-spot fines for violations. According to Paragraph 6 of the above article, these measures cannot be carried out against minors under 14 years of age. This means they can be carried out against military personnel, since the law did not make them an exception in this question. In addition, the basis for this decision is also found in Article 144 of the Law on Yugoslav People's Army, which states: "Military personnel must answer for violations according to the general regulations on violations."

The conditions for carrying out these measures against military personnel are stipulated in Article 150 of the Basic Law on Violations and in Points 29-31 of the Regulations. They are:

- 1) The act must fall under the proper provisions regulating the respective infringements, give the authority for collection of fines on the spot, and fix the amount of the fine;
- 2) The person must be caught in the act of committing the violation; and
- 3) The committer of the violation must willingly consent to pay the fine.

When the committer of a violation agrees to pay the fine the procedure is very simple. After the NM official informs the military person that his act is illegal and viewed as a violation for which a fine must be paid on the spot, he requests payment of the established amount and gives him confirmation from the specific statute. In this case the NM official does not check the identification paper, nor is it necessary for him to establish the military person's identity. However if the military person refuses to pay the fine, the NM official is obliged to submit a report against him to the authorized organ. Accordingly, the NM official will seek from the military person the information necessary to fill out the report. This information is: first and last names, military post, and place of residence. This information is obtained by the NM official from the identification papers, pass or other documents found on the person. According to Order No 5127 of the Ministry of

National Defense, of 29 December 1951, all military personnel in such instances must identify themselves and give the requested information. Point 2 of the above-mentioned order specifically stipulates: "All military personnel are obliged to avoid acts which are defined by law or regulations as violations, however if on any occasion they commit a violation, they must bear the legal consequences of their act as do other citizens. Accordingly, all military personnel who commit a violation in an area under the control of a civilian organ must, upon demand, show their identification papers, pass, or other documents from which the concerned organ can establish the first and last names, military post, and place of residence of the military personnel." Any other information that might be found on the identification papers or other documents is of no interest to the NM official and he is not authorized to look at, check, or take them. The information which has been taken is sufficient to fill out the report.

If a military person refuses to identify himself or give the requested information and there is located near at hand a military patrol, military police patrol, or a military person of higher rank than the person refusing to identify himself, the NM official will acquaint them with the reasons that make identification necessary and demand that they determine his identity and obtain the required information. In a situation when one of the mentioned military organs is not near at hand, the NM official will proceed according to the orders found in Points 40 and 48 of the Regulations, that is, he will take the military person to the nearest military unit or NM station if it is not possible to call the military organs to intervene.

## 2. The Identification of Military Personnel

Service Regulations consider only the question of identification of a military person who is in uniform, because those not in uniform are identified according to the conditions and procedures stipulated for all citizens. The reason for this is that only through identification is it possible to establish whether a person not in uniform is a military person. However, since the aim of identification is to establish the identity of a certain person, it is carried out not only with people that are unknown to the NM official but also with military personnel. Accordingly, a NM official will not check the papers of a military person whom he knows and who at that particular moment is in civilian clothing, as he would not check the papers of a civilian whom he knows. In case it is necessary to check his papers to obtain the information to file a report, that person must be treated as though he is in uniform, since he is known to be a military person.

According to Point 39 of the Regulations for Execution of Duty, NM officials may check the papers of a military person in uniform:

- 1) When he is caught in the act of committing a criminal act or violation; and
- 2) When there exists a justifiable suspicion that there has been a warrant for his arrest.



There is a third occasion -- not mentioned in the Regulations because it is understood -- when NM officials have the right to check the papers of a military person, that is, when compulsory identification is made of all people in some area or installation. (Not even then does the NM official check the papers of people who are known to him).

Other than on these occasions, NM officials do not have the right to check the papers of military personnel when they are in uniform. Even on these occasions, excepting the third, the right to check papers is conditional to there not being at hand a military organ, military patrol, military police patrol, or military duty organ. Accordingly, if there is at hand any of these military organs, the NM officials will not check the papers of the military person but will demand that the papers be checked by the military organ and that it supply the necessary information to him. The requested military organ is obliged to check the papers of the particular military person, obtain from him the desired information, and give it to the NM official. The mentioned military organs are compelled to do this as emphasized in Point 104 of the Duty Regulations of the JNA and other rules.

If there is on the scene a military person of higher rank than the person whose papers the NM official wants checked, the official will speak to this person, acquaint him with the necessity of checking the papers, and request permission to check the papers or ask him to check them and obtain the information which is necessary to the NM official. The requested military person is obligated to give the requested aid to the NM official, i.e., allow the NM official to check the papers of the person, or to do it himself. The NM official will proceed in this manner if no military organ exists near at hand.

However, if there is no military organ near at hand and the military person refuses to identify himself and give the requested information, the NM officials will seek the intervention of the nearest military unit or command, if this is possible and if the delay will not endanger important public property. If this is not possible, or if the wait for the arrival of the military organ would involve damage to important public property, NM officials are authorized to bring the person in and, if he resists, to use the necessary coercive measures.

Establishment of the identity of a military person is accomplished from identification papers, passes or other document from which it is possible to ascertain with certainty his first and last names, military post, and place of residence. However, since this is not explicitly stressed in the Regulations for establishing the identity of a military person, it is possible to use, as an exception, the aid of known and certain witnesses, as with other people.

As regards identification of a military person, it is necessary to mention certain phenomena which manifest themselves in everyday practice. It so happens that military personnel offer resistance to identification, allegedly, from fear that showing their identification papers, passes, or other documents which they possess for identification might reveal a military secret. Such a fear is unwarranted, since the

information sought does not constitute a secret. In addition, it sometimes happens that a military person shows only that he possesses identification papers, but refuses to give the desired information with the justification that by command of his superior he is to give no information from his papers or pass or give his papers to anyone other than military organs.

Such a statement normally represents an excuse and attempt to escape responsibility and is contrary to the series of positive regulations of the JNA. It also normally leads to unnecessary repeated explanations between the NM official and the military person and a coarse form of intervention and use of coercive measures. The new Regulations have limited the number of situations in which NM officials may check the identification of military personnel to a minimum and the information which can be sought or taken from identification papers is such that its divulgence would not disclose any military secret. Therefore, there exists no objective or justifiable reason for a military person to offer resistance to identification and to divulge information which, according to military regulations, he is obliged to give.

### 3. Arresting Military Personnel

Arrest, according to the Regulations for Executing Duty, is understood to mean the bringing about of criminal, judicial, and legal action and administrative criminal proceedings. The acceptance of a common term for all these instances consequently came from the type of proceedings of NM officials and similar actions. Also, pedagogical motives demanded that these actions and proceedings be incorporated in one simple name. It is necessary to mention that in military regulations what the Regulations consider "arrest," they define as deprivation of freedom. However, this does not change things, because under the concept of arrest are included only those occasions which, according to military regulations, NM officials have the right to deprive a military person of freedom.

NM officials are authorized to arrest a military person only in the following four cases:

- 1) When a military person commits a criminal act or violation and refuses to identify himself and give the necessary information, or when he does not have a pass to establish his identity;
- 2) When a military person threatens to commit a new violation or to continue a violation;
- 3) If a military person is caught in the act of committing a criminal act which warrants arrest pending trial, or has committed a criminal act and there is danger that he will escape or when life or other important public property might be endangered if that person were to remain free; and
- 4) When there is issued a warrant for the arrest of the military person.

The first case under consideration is that of a military person committing a criminal act or violation which is not serious. In such

a case NM officials are obliged to file a report against the violator to the authorized organ and will, with the aim of securing information, check the identity of the military person. If the military person allows himself to be identified or gives the required information, there is no need to bring him in. However, if the military person refuses to show his papers or does not have a pass to establish his identity, he is suspect and NM officials will ask him to accompany them to the nearest military unit or, if there is none in the area, to the NM station to establish his identity.

To be arrested, in the second case, the military person must have committed or attempted to commit a violation, or openly threatened to continue a violation or commit a new one. The aim of arresting him is the prevention of further violations.

Under the third case falls the military person who commits a criminal act which warrants arrest pending trial or a criminal act which does not warrant such an arrest, but where there is danger that he will escape or his continued freedom would endanger life or other important property. In this case the arrest is compulsory and if the identity of the military person is established, the arrest is for the purpose of securing his presence before an organ of criminal prosecution and to prevent the execution of new criminal acts.

In the fourth case, NM officials execute an arrest on the basis of an order from an authorized organ, since a warrant is considered a written order for arrest. It is necessary for NM officials, in this case, to establish that there is a warrant before arresting a person.

In other than the above-mentioned cases, NM officials do not have the authority to arrest military personnel without an order. However, NM officials, even in the cases mentioned, can arrest military personnel only on the condition that there does not exist in the area a military organ or time will not allow aid or intervention from a military organ to be sought.

If in the cases mentioned it is possible to secure the intervention of a military organ, NM officials will do so and, while waiting for their arrival, will ensure that the person does not stray or leave the scene.

Military personnel are taken to the nearest military command or unit or, if in the particular area there are none, they are taken to the NM station or the SUP (Sekretariat za unutrašnje poslove - Secretariat of Internal Affairs). If a military person is taken to a NM station, the commander of the station must immediately inform the nearest military unit or command to come and take him. When taking a military person to a military command or unit, as when taking him to the NM station, NM officials file a report to the military organ concerning the criminal act or violation committed by the military person and his attitude and behavior towards NM officials.

In the Regulations for Executing Duty, under the concept of arrest, those actions of officials which, according to military regulations, constitute deprivation of freedom are considered the practical

procedure and are in accord in every way with the corresponding JNA regulations. As an example, Article 144 of the Law on JNA stipulates, "military personnel are responsible for violations according to the General Regulations on Violations." And Point 89 of the Duty Regulations of the JNA states: "Organs of internal affairs may deprive military personnel of their freedom only if they are caught committing a criminal act which warrants arrest pending trial, or if danger exists of escape, or if damage would be done to life or other important public property if the military personnel were to retain their freedom. In such a case military personnel are immediately handed over to the organs of the Military Police or the nearest military unit (institution).

"As with other people, a military person caught committing a serious crime may be deprived of his freedom.

"If a military person is in civilian clothes he is obliged to identify himself to the organ concerned and accompany its officials to the nearest NM station to ascertain whether there is any suspicion in his identity." This is also confirmed in Article 68 of the Law on Military Courts. Thus are the Regulations paraphrased in the mentioned military regulations of the JNA.

#### 4. Personal Search of Military Personnel

According to Point 73 of the Regulations for Execution of Duty, NM officials may search military personnel in two instances. The first is when a military organ for any reason requests NM officials to search a military person. In such a case the military organ's motives for demanding the search and for having the NM officials perform it is not important. It is only important that an authorized military organ demand this help in the execution of its duties. The rendering of such aid and cooperation to military organs is prescribed in the NM Regulations for Execution of Duty and in Military Police Regulations.

The second occasion on which NM officials may search a military person is in the event of arrest. Personal search in such a case can be conducted only if there is danger that the military person may make armed resistance to or attack NM officials. If this danger does not exist, NM officials may not search a military person. NM officials determine the existence of such danger by the attitude of the military person and his reaction to arrest. Here the aim of personal search is the safety of NM officials and the seizure of weapons or other means by which a military person may offer armed resistance to or attack NM officials. When arresting a military person, NM officials will request that he hand over his personal weapons, i.e., weapons which military personnel carry on duty, or any other form of weapon which he might have on his person (hunting weapons). If the weapon is one that is carried in a case, the weapon will be demanded in the case. If military personnel give up their personal weapons there is no need for search, especially if they do not resist arrest. When conducting personal search of a military person it is necessary, if carried out on the spot, to do



so in such a manner as not to arouse the curiosity of citizens and not in their presence. In such a search, which is executed only for the seizure of weapons or other means by which armed resistance to or attack on NM officials might be made, the presence of two witnesses is not sought, as it is on all other occasions of personal search to discover evidence or manner of a criminal act. Personal search on the arrest of a military person for whom there has been a warrant issued is always made regardless of whether he is armed or not. If this is not explicit in the Regulations, it is because it is understood. The single fact that there is a warrant for the arrest of a person and he is hiding from and evading the organs of authority indicates that he is dangerous and caution must be used when handling him.

#### 5. Search of the Residence of a Military Person

The residence of a military person is understood to mean places in which he lives, regardless of whether or not he resides with civilians (for example, living together in the same room). NM officials conduct search of the residence of a military official, as regards a criminal act or violation, only on demand of an authorized military organ or with its approval. However, this limitation does not apply to search of places mutually used by civilians and military personnel when there is mutual or close residence (cellars, attics, etc.). Thus, NM officials may conduct a search of these places as the result of a criminal act or violation committed by a civilian. However, in the event of a search of these places, NM officials will inform the military personnel or an adult member of their family of the search and call them if their presence is desired.

If the search of the residence of a military person is due to the demand or authorization of an authorized military organ, NM officials will proceed as they would with a search of other citizens, with the one difference that a report of the search is also sent to the military organ.

Under Article 96 of the Regulations, authority is given to NM officials to enter the residence of a military person and conduct a search under the following circumstances: if the owner of the residence so desires; if a member of the residence calls for help; if it is necessary to capture the perpetrator of a criminal act who was surprised in that act; if in the residence of a military person there is a person who, by order of an authorized organ, is to be imprisoned or arrested or who in the course of prosecution took refuge in that residence; or when it is evident that there is no other manner of securing evidence of a criminal act. These cases are the same as those stipulated in Article 204 of the Criminal Procedural Code, in which NM officials are given the authority to enter a strange residence and conduct a search without an order from an authorized organ. Especially in extraordinary and emergency situations, is there no justifiable reason for limitations with regard to military personnel. The same decisions must be adopted as when civilians are involved. Therefore, NM officials may enter the residence of a military person without orders when it is necessary to



prevent general danger to an individual's life. General danger is understood to mean danger which imperils the life of an indefinite number of people or property, which includes floods, blizzards, earthquakes and other storms. Individual life may indeed be endangered by the mentioned phenomena and in various other manners, for example: when a fire breaks out at night, when a building begins to collapse, etc. The legal foundation for entering a residence in these events is laid in Article 78 of the Law on Internal Affairs Organs.

When NM officials enter the residence of a military person in the mentioned cases, to conduct a search or not, they must act as other citizens would. Entrance into a residence may be provoked and necessitate general security measures, as in the case of security, raids, etc. In such cases, NM officials may enter the residence of a military person without an order or the authority of a military organ. However, in such a case, if possible and if it will not endanger the secrecy of the prepared action, it is necessary to inform the commander of the garrison or have his approval.

Except in the mentioned cases, NM officials do not have the right to enter the residence of a military person or conduct a search there. NM officials are obliged to file a report to the Secretariat of Internal Affairs of the People's Council of the srez and to the command of the military unit, concerning all searches of the residences of military persons or entrance into such residences without an order. The report must include: the name of the owner of the residence, the reason for entering the residence of the military person, or why and by what order a search was conducted in that residence or place. In addition to this information, a copy of the notes on the search, from which it is possible to see the results of the search, will be furnished. On the basis of this, the military organ can judge the justification for and correctness of the procedures of the NM officials and, if the procedures were improper and not by legal and proper authority, undertake measures against the responsible official.

#### 6. The Use of Physical Force Against a Military Person

The concept physical force is defined in Point 107 of the Regulations. NM officials may use physical force against a military person if attack or resistance hinders the execution of duty. Thus, physical force may be used to extract a person from a barracaded place or from a group of people if he offers resistance; to delay or take a person from a particular place; and to seize articles used to commit a criminal act or designed for that use, obtained by criminal act, originating from a criminal act, or obtained as payment for committing a criminal act. Similarly, physical force may be used in seizing articles which endanger safety when making an arrest, when it is necessary to seize weapons or articles which may be used to attack NM officials. Physical force may be used in all cases where the use of firearms is permitted. Accordingly, physical force may be used against a military person in the same instances that it might be used against other citizens. However, the problem of

using physical force against a military person has a certain limitation, namely, physical force may be used against a military person in uniform only if it is not possible to secure the timely intervention of a military organ. For a military person in civilian clothes, there is no such limitation on the use of physical force and it may be used against him in such a situation as it would be against other citizens. However, it is our opinion that the intervention of a military organ should be sought, if possible, in these situations.

#### 7. The Use of a Truncheon Against Military Personnel

The conditions for the use of a truncheon against military personnel are the same as for other citizens. Thus, a NM official may use the truncheon to subdue resistance by a military person who is disturbing public order and peace or who is encouraging another to do the same; to subdue resistance by a military person being arrested, escorted or unarmed of weapons or articles with which he might attack officials; in repelling a physical attack upon himself or another in the service or an attack upon the person he is arresting, escorting or guarding; and in all cases where the use of firearms is permitted. The truncheon may be used only in the line of duty and under the condition that the execution of duty cannot be ensured in any other manner. Consequently, the truncheon may be used against military personnel in uniform only if it is not possible to secure timely intervention of a military organ, or while awaiting the arrival of a military organ, if duty could not be executed or its execution attained only with great difficulty, or damage could be done to important public property. In using the truncheon, the NM official is obliged to warn the person against whom he intends to use the stick that he will do so. Accordingly, in judging the correctness of the use of the truncheon against a military person, he must consider: whether its use is in the line of duty; whether the duty might be accomplished in another manner; whether it is possible to secure the timely intervention of a military organ; whether he has warned the military person that he will use the truncheon; or whether there is the possibility to issue such a warning. On this basis rests the decision concerning the correctness of using the truncheon.

Regarding the use of the truncheon against military personnel in civilian clothes, there are no more restrictions on its use than with other citizens. However, if the NM official knows that the person is a military person he would not be permitted to lack flexibility and adhere literally to Regulations. Whenever possible and when it will not hinder the execution of duty, it is necessary that he seek the intervention of a military organ.

#### 8. The Use of Firearms Against Military Personnel

The occasions and conditions under which NM officials may use firearms are stipulated in Article 84 of the Law on Internal Affairs Organs. These are the same occasions and conditions found in the Regu-

lations for the Execution of Duty. Regarding the use of firearms against military personnel, there are no more restrictions on their use than with other citizens. It is only stipulated that whenever possible to secure the timely intervention of a military organ, it must be sought. However, considering the situations in which conditions permit the use of firearms, there will be very few which will allow the NM official to seek intervention by a military organ in time. It is impossible to foretell in which situations that possibility will exist, therefore it is left up to the NM official to judge whether the possibility exists in the given situation. Sometimes the possibility will exist for informing a military organ, but the wait for its arrival to intervene will be too long, because the person involved might carry through his intentions. Therefore, very careful judgement must be made of the question as to whether in that particular situation it is possible to secure intervention by a military organ in time. Situations which permit the use of firearms are three: prevention or repulsion of an attack, prevention of escape, and overcoming resistance. Perhaps only in this last situation does there exist the possibility of waiting for the intervention of a military organ; however, not always, since everything depends upon the circumstances of the particular situation.

When physical force, the truncheon, or firearms are used against military personnel, a report must be sent to the SDSUP (Savezni drzavni sekretariat za unutrashnje poslove -- Federal State Secretariat of Internal Affairs), which is not the case when these means are used against other citizens. It is also mandatory that military organs notify the SDSUP. Strict control over the justification and correctness of the use of these measures is in this manner accomplished when the question involves a military person.

#### 9. Temporary Use of Military Transportation

NM officials are authorized to use military transportation for the capture of one committing a criminal act whom they immediately pursue and for transporting to the nearest medical institution or doctor a victim of a criminal act or accident. The use of transportation of civilian registration belonging to military personnel has no special limitations and may be used under the conditions as for the transportation of other citizens. In similar situations and under the same conditions, vehicles of military registration might be used, such as a military ambulance or military fire engine, but under the condition that no other vehicle can be used and their use will not interfere with the execution of their duty.

The Regulations also see the possibility of using military vehicles moving in a column or military transport vehicles, but only under the condition that the use of that vehicle is approved by the superior, commandant of the column, or transportation or duty officer. Concerning the use of a vehicle of a military unit, the Regulations stipulate that officials will seek the use of such vehicles only if no other vehicles are at their disposal or if the speed or extent of the job demands the use of a vehicle of a military unit.

From this it is clearly emphasized that the authority and intervention of a NM official with regards to military personnel is stipulated in the Regulations, is responsive to the realistic needs of the service, ensures the execution of duty, and is in accord with existing legal regulations. This leaves sufficient room for the development of individual initiative by the NM official and the realization of strong cooperation with military organs, which are also interested in the correct solution of this problem.

The gradual realization of this cooperation, and how much of the Regulations will be correctly grasped, depends upon the success of their effect in action. Accordingly, it is necessary to keep in mind that any lack of flexibility damages success and makes it difficult.